



Third West Weekly Report Shepherd, Michael

Joyce Ackerman, 'Craig Barnitz (cbamitz@utah.gov)' 11/02/2011 12:45 PM

Hide Details

From: "Shepherd, Michael" < Michael. Shepherd@PacifiCorp.com>

To: Joyce Ackerman/R8/USEPA/US@EPA, "'Craig Bamitz (cbamitz@utah.gov)'" <cbarnitz@utah.gov>

7 Attachments









Weekly Reports 10-24-11 through 10-28-11.pdf Third West Weekly Log 2011-43.pdf 223070-1.pdf 223142-1.pdf







223268-1.pdf 223269-1.pdf 223363-1.pdf

Joyce & Craig,

Attached are the reports for the week of October 24, 2011.

All air monitoring results came back negative.

Please let me know if you have any questions.

Thanks,

Mike Shepherd **Project Manager Rocky Mountain Power - Major Projects** 801.220.4584 Office 801.631.1310 Cell 801.220.2797 Fax michael.shepherd@pacificorp.com



October 31, 2011

Laboratory Code:

RES

Subcontract Number:

NA

Laboratory Report: Project # / P.O. #

RES 223268-1 None Given

Project Description:

3rd West Sub Station -

RMP

Eldon Romney R & R Environmental 47 West 9000 South #2 Sandy UT 84070

Dear Customer,

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 223268-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Jeanne Spencer Orr

President

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-0015

TABLE I. TEM AIR FILTER SAMPLE DATA AND ANALYTICAL RESULTS

RES Job Number:

RES 223268-1

Client:

R & R Environmental

Client Project Number / P.O.: None Given

Client Project Description:

3rd West Sub Station - RMP

Date Samples Received:

October 28, 2011

Analysis Type:

TEM, AHERA

Turnaround:

24 Hour

Date Samples Analyzed:

October 28, 2011

Client ID Number	Lab ID N	umber	Area Analyzed	Air Volume Sampled	Number of Asbestos Structures Detected	Analytical Sensitivity	Asbestos Concentration	Filter Loading
			(mm²)	. (L)		(s/cc)	(s/cc)	(s/mm²)
3W-102711-E	EM	816061	0.0880	917	ND	0.0048	BAS	BAS
3W-102711-S	EM	·816062	0.0880	916	ND	0.0048	BAS	BAS
3W-102711-N	EM	81606 3	0.0880	913	ND	0.0048	BAS	BAS
3W-102711-W	EM	816064	0.0880	916	ND	0.0048	BAS	BAS

NA = Not Analyzed

Filter Material = Mixed Cellulose Ester

ND = None Detected

Filter Diameter = 25 mm

BAS = Below Analytical Sensitivity

Average Grid Opening in mm² = 0.011

Effective Filter Area = 385 sq mm

DATA QA



Project:	3rd West Sub Station	Date:	10/24/11
Location:	3rd West, 1st South, SLC	Job Number:	
Survey Conducted By:	Jon Craig	Title:	IH Technician
-	· —		

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.59	Hazard Communication Program, List of Chemicals, Training, MSDSs.			x	
1926.500 (b) & (d) (old standard)	Guardrails on open sided floors, floor holes and runways.			x	
1926.404 (b)	Ground fault circuit interrupters or an assured equipment grounding conductor program in use.	x			
1926.451 (b)	The employer shall instruct each employee in the recognition and avoidance of unsafe conditions.			x	
1926.451 (d)	Tubular welded scaffolds shall be properly braced so that they are plumb, square and rigid; legs on plumb, adjustable, mud sills, etc. to support the maximum load; guardrails and toeboards shall be installed.			x	
1926.100 (a)	Head protection, where there is a possible danger of head injury.	x			

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.652 (a) (1)	Excavation protective systems; examination by competent person when less than 5 feet in depth.			x	
1926.20 (b) (2)	Employer responsibility to initiate and maintain safety and health programs.	x			
1926.20 (b) (1)	Employer responsibility to provide for frequent and regular inspections by designated competent persons.	x			
1926.451 (e)	Manually propelled scaffolds shall have tight planking for the full width, platforms secured, ladder or stairway provided, suitable footing, stand plumbs, wheels locked, guardrails and toeboards.			x	
1926.1052 (c) (1)	Stair rail and handrail along each unprotected edge.			х	
1926.25 (a)	D ebris, scrap lumber with protruding nails, not cleared for work areas, stairs and around structures.			x	·
1926.50	First aid shall be available in the absence of an infirmary, or other that is reasonably accessible; first aid supplies shall be accessible and telephone numbers posted.			х	
1926.451 (a) (13)	Scaffolding safe access not provided by ladder or equivalent.			х	
1926.651 (k) (1)	Excavations, protective systems, inspected daily by a competent person and as needed.			x	
1926.403 (b)	Employer shall ensure electrical equipment is free from recognized hazards, is suitable, used in accordance with the listing, labeling or certification.			x	

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 <u>(</u> a)	Scaffolding shall have guardrails and toeboards when more than 10 feet high and when less than 45 inches of work space.			х	
1926.405 (g) (2)	Flexible cords shall be used without splice or tap; strain relief shall be provided.			x	
1926.405 (b)	Electrical boxes, fittings shall have covers, faceplates or canopy and holes shall be smooth where cords pass through; and unused openings in cabinets/boxes shall be closed.	x		:	
1926.701 (b)	Reinforcing steel onto which employees could fall shall be guarded.			x	
1926.1053 (b) (1)	Portable ladder side rails extend at least 3 feet or be secured at top.	·		x	
1926.651 (j) (2)	Excavations shall have materials or equipment placed at least 2 feet from the edge.	x			
1926.651 (c) (2)	Excavations shall have a safe means of egress such as ladders, ramps, etc.	x			
1926.150 (c)	Portable fire fighting equipment shall be provided and extinguishers shall be inspected periodically.			х	
1926.102 (a) (1)	Eye and face protection shall be provided.	x			
1926.300 (b) (2)	Guards for power tools shall be used and moving parts of equipment shall be guarded.	x			
1926.350 (a)	Oxygen cylinders in storage shall be separated from fuel gas cylinders by at least 20 feet or a ½ fire resistance barrier.		•	х	

Standard	Title	In Compliance	Out of Compliance	N/A	Corrective Action Taken and Date
1926.405 (a) (2) (ii) (e) & (f)	Temporary lights shall be protected from breakage, not suspended by their cords and extension cord.			х	
1926.405 (a) (2) (ii) (j)	Extension cords used with portable electric tools shall be of three wire type and designed for hard or extra hard usage.	x		·	·
1926.105 (a)	Workplaces more than 25 feet above the ground or water shall have safety nets when ladder, safety line/belts, temporary floors, scaffolds, catch platform are not practical.			x	
1926.1051 (a)	Stairway or ladder shall be provided at all access points where there is a break in elevation of 19 inches or more.			x	
1926.451 (a) (2)	Scaffolding footing or anchorage shall be sound, rigid and capable of carrying the maximum intended load.			x	
1926.500 (c) (1) (old standard)	Wall opening shall be guarded.			x	
1926.404 (f)	Electrical equipment connected by cord and plug shall be grounded except if there is an isolating transformer or the tool is double insulated.	x			
1926.556 (b)	When working from an aerial lift, a full body harness and lanyard attached to the boom or basket.			x	
1926.501 (b) (1) (new standard)	Guardrails, safety nets or personal fall arrest system shall be used at 6 feet or more.			x	

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title	口			Da te
1926.451 (a) (14)	Scaffold planking shall extend over their end support not less than 6 inches and not more than 12 inches.			х	
1926.602 (a) (9)	Bi-directional earth moving equipment shall have audible alarms.	x			
1926.451 (a) (3)	Scaffolding shall be erected, moved, dismantled or altered under the supervision of a competent person.			x	
1926.550 (b)	Cranes, crawler, truck or locomotive, shall meet the design, testing, maintenance, and operation per ANSI B30.5_1968. The most recent certification shall be on file until a new one is prepared.			x	

Newman excavating for footings in SE Area. No hauling soil off-site. Newman backfilling around the foundation of the new building in the exclusions.

CVE forming rebar in East Parking for footings in the SE excavated area. Crane in operation to stage rebar. Continued construction of the New Building.

No disturbance of soil in the exclusion zone.





3^{RD} West Substation Remediation Project **HEALTH SAFETY MANAGER (HSM)**

DATE:	10/24/11 DAILY CHECKLIST
DATE	
<u>General</u>	
. 🗹	Work area Health and Safety Inspection
NA	Review and if necessary update Activity Hazard Analyses (AHA) based on planned site
	activities for the day
NA	Safety Planning or "Tailgate" mandatory meeting for all employees and contractors prior to commencement of any site work. Instruction, review hazards, health & safety issues and any modifications to the CSHASP
NA	Site hazard and safety instruction for all first time employees, contractors or visitors
NA	Complete Employee Meeting Record Form B (where applicable
NA	Document required Respirator Training completion with Form H
NA	Record times and numbers of dump trucks and trailers as they leave the site with contaminated material.
NA	Confirm return of waste material manifest documents for each load with site manager.
NA	Complete all CSHASP Forms (for applicable activities planned for that day)
NA	Illness/Injury Report Form A
NA	Site-Specific Training Record Form C
NA	Hot Work Permit Form D
NA	Trench/Evacuation Permit Form E
NA	Combined Space Entry Pennit From F
NA	Exclusion zone operations are practiced as instructed.
	NA Decontamination unit is working properly.
	NA Workers are using decontamination unit as instructed.
	NA Workers use personal protective equipment properly.
\square	Set air samples at cardinal compass points around exclusion zone. Check
_	throughout the day to ensure proper operation.
☑	Observe control measures for dust and fugitive materials i.e. watering excavation sites and track out prevention.
☑	Review sign-in/sign-out log throughout and at the end of the workday.
☑ ·	Secure the site at the end of the workday; PacifiCorp Employee
Sampling	{
NA	Soil Confirmation sampling for any newly excavated areas
NA	Stationary Air Monitoring during contaminated soil removal around the perimeter of the
	exclusions zone
NA .	Personal Breathing Zone Monitoring on personnel conducting contaminated dust and soil removal
NA	Digitally photograph each sample location and at any place field sampling personnel determined necessary





NA	Electronically file photo files into the on-site database
	Complete Field Documentation
\square	Field Sample Data Sheets (FSDS)
. 🗹	Logbook
NA	On-site computer database
abla	Label each sample media with a unique number
	Seal sample(s) in zip lock plastic bags
	Complete and include Chain of Custody (COC) Form required for shipping of samples to appropriate laboratory
abla	Package samples for transport IAW SOP 2-1, Packaging and Shipping of Environmental
	Samples
	Review and disseminate sample results as received from the laboratories to Project
	Manager and other appropriate managers and employees
NA	Electronically file sample reports into on-site database



Project: Location: Survey Co	3rd West Sub Station 3rd West, 1st South, SLC nducted By: Jon Craig		ate: b Nu tle:	ımb	: IH Technician
·		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title		\Box		Date
1926.59	Hazard Communication Program, List of Chemicals, Training, MSDSs.			x	
1926.500 (b) & (d) (old standard)	Guardrails on open sided floors, floor holes and runways.			x	
1926.404 (b)	Ground fault circuit interrupters or an assured equipment grounding conductor program in use.	x			
1926.451 (b)	The employer shall instruct each employee in the recognition and avoidance of unsafe conditions.			x	
	Tubular welded scaffolds shall be properly			x	

x

braced so that they are plumb, square and rigid; legs on plumb, adjustable, mud sills, etc. to support the maximum load; guardrails and

Head protection, where there is a possible

toeboards shall be installed.

danger of head injury.

1926.451 (d)

1926.100 (a)

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date ,
1926.652 (a)	Excavation protective systems; examination by competent person when less than 5 feet in depth.			х	- 4
1926.20 (b) (2)	Employer responsibility to initiate and maintain safety and health programs.	x			
1926.20 (b)	Employer responsibility to provide for frequent and regular inspections by designated competent persons.	x			
1926.451 (e)	Manually propelled scaffolds shall have tight planking for the full width, platforms secured, ladder or stairway provided, suitable footing, stand plumbs, wheels locked, guardrails and toeboards.			x	
1926.1052 (c) (1)	Stair rail and handrail along each unprotected edge.			x	
1926.25 (a)	D ebris, scrap lumber with protruding nails, not cleared for work areas, stairs and around structures.			x	
1926.50	First aid shall be available in the absence of an infirmary, or other that is reasonably accessible; first aid supplies shall be accessible and telephone numbers posted.			x	
1926.451 (a) (13)	Scaffolding safe access not provided by ladder or equivalent.			x	
1926.651 (k) (1)	Excavations, protective systems, inspected daily by a competent person and as needed.			x	
1926.403 (b)	Employer shall ensure electrical equipment is free from recognized hazards, is suitable, used in accordance with the listing, labeling or certification.			x	

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		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 (a)	Scaffolding shall have guardrails and toeboards when more than 10 feet high and when less than 45 inches of work space.		,	х	
1926.405 (g) (2)	Flexible cords shall be used without splice or tap; strain relief shall be provided.			х	
1926.405 (b)	Electrical boxes, fittings shall have covers, faceplates or canopy and holes shall be smooth where cords pass through; and unused openings in cabinets/boxes shall be closed.	x			
1926.701 (b)	Reinforcing steel onto which employees could fall shall be guarded.			х	
1926.1053 (b) (1)	Portable ladder side rails extend at least 3 feet or be secured at top.			x	
1926.651 (j) (2)	Excavations shall have materials or equipment placed at least 2 feet from the edge.	x			
1926.651 (c) (2)	Excavations shall have a safe means of egress such as ladders, ramps, etc.	x			·
1926.150 (c) (1)	Portable fire fighting equipment shall be provided and extinguishers shall be inspected periodically.			x	
1926.102 (a) (1)	Eye and face protection shall be provided.	x			
1926.300 (b) (2)	Guards for power tools shall be used and moving parts of equipment shall be guarded.	x			
1926.350 (a)	Oxygen cylinders in storage shall be separated from fuel gas cylinders by at least 20 feet or a ½ fire resistance barrier.			x	

Standard	Title	In Compliance	Out of Compliance	N/A	Corrective Action Taken and Date
1926.405 (a) (2) (ii) (e) & (f)	Temporary lights shall be protected from breakage, not suspended by their cords and extension cord.			х	·
1926.405 (a) (2) (ii) (j)	Extension cords used with portable electric tools shall be of three wire type and designed for hard or extra hard usage.	x			
1926.105 (a)	Workplaces more than 25 feet above the ground or water shall have safety nets when ladder, safety line/belts, temporary floors, scaffolds, catch platform are not practical.	. ,		x	
1926.1051 (a)	Stairway or ladder shall be provided at all access points where there is a break in elevation of 19 inches or more.			x	
1926.451 (a) (2)	Scaffolding footing or anchorage shall be sound, rigid and capable of carrying the maximum intended load.			х	
1926.500 (c) (1) (old standard)	Wall opening shall be guarded.			х	
1926.404 (f) (7)	Electrical equipment connected by cord and plug shall be grounded except if there is an isolating transformer or the tool is double insulated.	x			
1926.556 (b)	When working from an aerial lift, a full body harness and lanyard attached to the boom or basket.			x	
1926.501 (b) (1) (new standard)	Guardrails, safety nets or personal fall arrest system shall be used at 6 feet or more.			x	·

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		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title			\Box	<i>Da</i> te
1926.451 (a)	Scaffold planking shall extend over their end support not less than 6 inches and not more than 12 inches.		·	х	
1926.602 (a) (9)	Bi-directional earth moving equipment shall have audible alarms.	х			
1926.451 (a)	Scaffolding shall be erected, moved, dismantled or altered under the supervision of a competent person.			x	
1926.550 (b)	Cranes, crawler, truck or locomotive, shall meet the design, testing, maintenance, and operation per ANSI B30.5_1968. The most recent certification shall be on file until a new one is prepared.			x	

Newman backfilling around the foundation of the new building in the exclusion zone.

CVE forming rebar in East Parking for footings in the SE excavated area. Continued construction of the New Building.

No disturbance of contaminated soil in the exclusion zone.





3RD WEST SUBSTATION REMEDIATION PROJECT HEALTH SAFETY MANAGER (HSM)

DAILY CHECKLIST

	DAILY CHECKLIST
DATE:	10/25/11
General	
	Work area Health and Safety Inspection
NA	Review and if necessary update Activity Hazard Analyses (AHA) based on planned site
147 %	activities for the day
NA	Safety Planning or "Tailgate" mandatory meeting for all employees and contractors prior to commencement of any site work. Instruction, review hazards, health & safety issues and any modifications to the CSHASP
NA	Site hazard and safety instruction for all first time employees, contractors or visitors
NA	Complete Employee Meeting Record Form B (where applicable
NA	Document required Respirator Training completion with Form H
NA	Record times and numbers of dump trucks and trailers as they leave the site with contaminated material.
NA	Confirm return of waste material manifest documents for each load with site manager.
NA	Complete all CSHASP Forms (for applicable activities planned for that day)
NA	Illness/Injury Report Form A
NA	Site-Specific Training Record Form C
NA	Hot Work Pennit Form D
NA	Trench/Evacuation Permit Form E
NA	Combined Space Entry Pennit From F
NA	Exclusion zone operations are practiced as instructed.
	NA Decontamination unit is working properly.
	NA Workers are using decontamination unit as instructed.
•	NA Workers use personal protective equipment property.
Ø	Set air samples at cardinal compass points around exclusion zone. Check
`	throughout the day to ensure proper operation.
	Observe control measures for dust and fugitive materials i.e. watering excavation sites and track out prevention.
\square	Review sign-in/sign-out log throughout and at the end of the workday.
Ø	Secure the site at the end of the workday; PacifiCorp Employee
Sampling	
NA	Soil Confirmation sampling for any newly excavated areas
NA	Stationary Air Monitoring during contaminated soil removal around the perimeter of the
	exclusions zone
NA	Personal Breathing Zone Monitoring on personnel conducting contaminated dust and soil removal
NA	Digitally photograph each sample location and at any place field sampling personnel determined necessary





NA Electronically file photo files into the on-site database ablaComplete Field Documentation ablaField Sample Data Sheets (FSDS) ablaLogbook NA On-site computer database ablaLabel each sample media with a unique number \square Seal sample(s) in zip lock plastic bags Complete and include Chain of Custody (COC) Form required for shipping of samples to \square appropriate laboratory Package samples for transport IAW SOP 2-1, Packaging and Shipping of Environmental ablaSamples ablaReview and disseminate sample results as received from the laboratories to Project Manager and other appropriate managers and employees NA Electronically file sample reports into on-site database



Project: 3rd West Sub Station		Date: 10/26/11					
Location:	3rd West, 1st South, SLC	Job Number:					
Survey Conducted By: <u>lustin Kargis</u>			Ti	itle: _	<u> </u>		
		In Compliance	Out of Compliance	N/A	Corrective Action Taken and		
Standard	Title			□	Date		
1926.59	Hazard Communication P rogram, List of Chemicals, Training, MSDSs.			x			
1926.500 (b) & (d) (old standard)	Guardrails on open sided floors, floor holes and runways.			x			
1926.404 (b)	Ground fault circuit interrupters or an assured equipment grounding conductor program in use.	х					
1926.451 (b)	The employer shall instruct each employee in the recognition and avoidance of unsafe conditions.			х			
1926.451 (d)	Tubular welded scaffolds shall be properly braced so that they are plumb, square and rigid; legs on plumb, adjustable, mud sills, etc. to support the maximum load; guardrails and toeboards shall be installed.			х	ţ		
	Head protection, where there is a possible	x					

1926.100 (a)

danger of head injury.

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.652 (a)	Excavation protective systems; examination by competent person when less than 5 feet in depth.			х	,
1926.20 (b) (2)	Employer responsibility to initiate and maintain safety and health programs.	x			
1926.20 (b) (1)	Employer responsibility to provide for frequent and regular inspections by designated competent persons.			X.	
1926.451 (e)	Manually propelled scaffolds shall have tight planking for the full width, platforms secured, ladder or stairway provided, suitable footing, stand plumbs, wheels locked, guardrails and toeboards.			x	
1926.1052 (c) (1)	Stair rail and handrail along each unprotected edge.			x	
1926.25 (a)	D ebris, scrap lumber with protruding nails, not cleared for work areas, stairs and around structures.			x	
1926.50	First aid shall be available in the absence of an infirmary, or other that is reasonably accessible; first aid supplies shall be accessible and telephone numbers posted.			x	
1926.451 (a) (13)	Scaffolding safe access not provided by ladder or equivalent.			x	
1926.651 (k) (1)	Excavations, protective systems, inspected daily by a competent person and as needed.		,	x	
1926.403 (b) (2)	Employer shall ensure electrical equipment is free from recognized hazards, is suitable, used in accordance with the listing, labeling or certification.	x			

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title		□		Date
1926.451 (a)	Scaffolding shall have guardrails and toeboards when more than 10 feet high and when less than 45 inches of work space.			х	
1926.405 (g) (2)	Flexible cords shall be used without splice or tap; strain relief shall be provided.			x	`
1926.405 (b)	Electrical boxes, fittings shall have covers, faceplates or canopy and holes shall be smooth where cords pass through; and unused openings in cabinets/boxes shall be closed.	х	1		v.
1926.701 (b)	Reinforcing steel onto which employees could fall shall be guarded.			x	
1926.1053 (b) (1)	Portable ladder side rails extend at least 3 feet or be secured at top.			x	·
1926.651 (j) (2)	Excavations shall have materials or equipment placed at least 2 feet from the edge.			x	
1926.651 (c) (2)	Excavations shall have a safe means of egress such as ladders, ramps, etc.	x			
1926.150 (c)	Portable fire fighting equipment shall be provided and extinguishers shall be inspected periodically.			х	
1926.102 (a) (1)	Eye and face protection shall be provided.	x			
1926.300 (b)	Guards for power tools shall be used and moving parts of equipment shall be guarded.	x			
1926.350 (a)	Oxygen cylinders in storage shall be separated from fuel gas cylinders by at least 20 feet or a ½ fire resistance barrier.			х	

Standard	<i>Titl</i> e	In Compliance	Uut of Compliance	N/A	Corrective Action Taken and Date
1926.405 (a) (2) (ii) (e) & (f)	Temporary lights shall be protected from breakage, not suspended by their cords and extension cord.			х	
1926.405 (a) (2) (ii) (j)	Extension cords used with portable electric tools shall be of three wire type and designed for hard or extra hard usage.	х			
1926.105 (a)	Workplaces more than 25 feet above the ground or water shall have safety nets when ladder, safety line/belts, temporary floors, scaffolds, catch platform are not practical.			х	
1926.1051 (a)	Stairway or ladder shall be provided at all access points where there is a break in elevation of 19 inches or more.			x	
1926,451 (a) (2)	Scaffolding footing or anchorage shall be sound, rigid and capable of carrying the maximum intended load.			x	
1926.500 (c) (1) (old standard)	Wall opening shall be guarded.			x	
1926.404 (f)	Electrical equipment connected by cord and plug shall be grounded except if there is an isolating transformer or the tool is double insulated.	x			
1926.556 (b)	When working from an aerial lift, a full body harness and lanyard attached to the boom or basket.			x ·	
1926.501 (b) (1) (new standard)	Guardrails, safety nets or personal fall arrest system shall be used at 6 feet or more.			х	•

		In Compliance	Out of Compliance	N/A	• Corrective Action Taken and
Standard	Title	\Box	\Box		Date
1926.451 (a)	Scaffold planking shall extend over their end support not less than 6 inches and not more than 12 inches.			x	
1926.602 (a) (9)	Bi-directional earth moving equipment shall have audible alarms.	x			
1926.451 (a)	Scaffolding shall be erected, moved, dismantled or altered under the supervision of a competent person.			x	
1926.550 (b) .	Cranes, crawler, truck or locomotive, shall meet the design, testing, maintenance, and operation per ANSI B30.5_1968. The most recent certification shall be on file until a new one is prepared.			x .	

<u>Bi-weekly team meeting items: watch for hydraulic leaks, fuel spills, fluid containment. Discussed removing transite housing around south get away cables.</u>

Newman continued excavation and earth work in S. E. zone, ended workday around 5 pm.

CVE fabricators continued to prepare forms for g-structures in S.E. zone.

4 pumps at compass points monitored air throughout the day.



NA

determined necessary



3^{RR} WEST SUBSTATION REMEDIATION PROJECT **HEALTH SAFETY MANAGER (HSM)**

			DAILY CHECKLIST
DA	TE	:	10/26/11
	C	1	
		<u>neral</u>	Walls and Hadde and Cafety Inspection
			Work area Health and Safety Inspection
	NA		Review and if necessary update Activity Hazard Analyses (AHA) based on planned site activities for the day
	Ø		Safety Planning or "Tailgate" mandatory meeting for all employees and contractors prior to commencement of any site work. Instruction, review hazards, health & safety issues and any modifications to the CSHASP
	NA		Site hazard and safety instruction for all first time employees, contractors or visitors
	NA		Complete Employee Meeting Record Form B (where applicable
	NA		Document required Respirator Training completion with Form H
N.A		•	Record times and numbers of dump trucks and trailers as they leave the site with
4 2	1		contaminated material.
N.A			Confirm return of waste material manifest documents for each load with site
I T E	1		
N/		Compl	manager. ete all CSHASP Forms (for applicable activities planned for that day)
172	1	NA	
		NA NA	Illness/Injury Report Form A
			Site-Specific Training Record Form C Hot Work Permit Fom D
		NA	
		NA	Trench/Evacuation Permit Form E
		NA	Combined Space Entry Permit From F
		NA	Exclusion zone operations are practiced as instructed.
			NA Decontamination unit is working properly.
			NA Workers are using decontamination unit as instructed.
			NA Workers use personal protective equipment properly.
	Ø		Set air samples at cardinal compass points around exclusion zone. Check throughout the day to ensure proper operation.
			Observe control measures for dust and fugitive materials i.e. watering excavation sites and
			track out prevention.
	I		Review sign-in/sign-out log throughout and at the end of the workday. Secure the site at the end of the workday
	Saı	mpling	
N/		Soil C	onfirmation sampling for any newly excavated areas
. \	1	Son C	Stationary Air Monitoring during contaminated soil removal around the perimeter of the
-			exclusions zone
	NA		
	148	L	Personal Breathing Zone Monitoring on personnel conducting contaminated dust and soil removal

Digitally photograph each sample location and at any place field sampling personnel





NA Electronically file photo files into the on-site database Complete Field Documentation Field Sample Data Sheets (FSDS) Logbook NA On-site computer database Label each sample media with a unique number $\overline{\mathbf{Q}}$ Seal sample(s) in zip lock plastic bags \square Complete and include Chain of Custody (COC) Form required for shipping of samples to appropriate laboratory ablaPackage samples for transport IAW SOP 2-1, Packaging and Shipping of Environmental Samples NAReview and disseminate sample results as received from the laboratories to Project Manager and other appropriate managers and employees NA Electronically file sample reports into on-site database



Project: 3 rd West Sub Station Location: 3 rd West, 1 st South, SLC		Date: 10/2//11						
		Job Number:						
Survey Conducted By: <u>Justin Kargis</u>			Title:					
		In Compliance	Out of Compliance	N/A	Corrective Action Taken and			
St <i>an</i> dard	Title	\Box			D a te			
1926.59	Hazard Communication Program, List of Chemicals, Training, MSDSs.			x				
1926.500 (b) & (d) (old standard)	Guardrails on open sided floors, floor holes and runways.			x .				
1926.404 (b)	Ground fault circuit interrupters or an assured equipment grounding conductor program in use.	x						
1926.451 (b)	The employer shall instruct each employee in the recognition and avoidance of unsafe conditions.			x				
1926.451 (d)	Tubular welded scaffolds shall be properly braced so that they are plumb, square and rigid; legs on plumb, adjustable, mud sills, etc. to support the maximum load; guardrails and toe boards shall be installed.			x				
	Head protection, where there is a possible	x						

1926.100 (a)

danger of head injury.

·		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.652 (a)	Excavation protective systems; examination by competent person when less than 5 feet in depth.			х	
1926.20 (b) (2)	Employer responsibility to initiate and maintain safety and health programs.	х			
1926.20 (b) (1)	Employer responsibility to provide for frequent and regular inspections by designated competent persons.			x ,	·
1926.451 (e)	Manually propelled scaffolds shall have tight planking for the full width, platforms secured, ladder or stairway provided, suitable footing, stand plumbs, wheels locked, guardrails and toe boards.	,		x	·
1926.1052 (c) (1)	Stair rail and handrail along each unprotected edge.			x	
1926.25 (a)	Debris, scrap lumber with protruding nails, not cleared for work areas, stairs and around structures.			x	
1926.50	First aid shall be available in the absence of an infirmary, or other that is reasonably accessible; first aid supplies shall be accessible and telephone numbers posted.			x	
1926.451 (a) (13)	Scaffolding safe access not provided by ladder or equivalent.			х	
1926.651 (k) (1)	Excavations, protective systems, inspected daily by a competent person and as needed.			х	
1926.403 (b)	Employer shall ensure electrical equipment is free from recognized hazards, is suitable, used in accordance with the listing, labeling or certification.	х			

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title			\Box	Date
1926.451 (a)	Scaffolding shall have guardrails and toe boards when more than 10 feet high and when less than 45 inches of work space.			х	
1926.405 (g) (2)	Flexible cords shall be used without splice or tap; strain relief shall be provided.			х	
1926.405 (b)	Electrical boxes, fittings shall have covers, faceplates or canopy and holes shall be smooth where cords pass through; and unused openings in cabinets/boxes shall be closed.	x *			
1926.701 (b)	Reinforcing steel onto which employees could fall shall be guarded.			x	
1926.1053 (b) (1)	Portable ladder side rails extend at least 3 feet or be secured at top.			x	,
1926.651 (j) (2)	Excavations shall have materials or equipment placed at least 2 feet from the edge.			x	
1926.651 (c) (2)	Excavations shall have a safe means of egress such as ladders, ramps, etc.	x			
1926.150 (c) (1)	Portable fire fighting equipment shall be provided and extinguishers shall be inspected periodically.			x	
1926.102 (a) (1)	Eye and face protection shall be provided.	x			
1926.300 (b) (2)	Guards for power tools shall be used and moving parts of equipment shall be guarded	x			
1926.350 (a)	Oxygen cylinders in storage shall be separated from fuel gas cylinders by at least 20 feet or a ½ fire resistance barrier.			x	

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.405 (a) (2) (ii) (e) & (f)	Temporary lights shall be protected from breakage, not suspended by their cords and extension cord.			х	
1926.405 (a) (2) (ii) (j)	Extension cords used with portable electric tools shall be of three wire type and designed for hard or extra hard usage.	х			
1926.105 (a)	Workplaces more than 25 feet above the ground or water shall have safety nets when ladder, safety line/belts, temporary floors, scaffolds, catch platform are not practical.			x	
1926.1051 (a)	Stairway or ladder shall be provided at all access points where there is a break in elevation of 19 inches or more.			x	
1926.451 (a)	Scaffolding footing or anchorage shall be sound, rigid and capable of carrying the maximum intended load.			x	
1926.500 (c) (1) (old standard)	Wall opening shall be guarded.			x	
1926.404 (f) (7)	Electrical equipment connected by cord and plug shall be grounded except if there is an isolating transformer or the tool is double insulated.	х			
1926.556 (b) (2)	When working from an aerial lift, a full body harness and lanyard attached to the boom or basket.			х	
1926.501 (b) (1) (new standard)	Guardrails, safety nets or personal fall arrest system shall be used at 6 feet or more.		·	х	

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Da te
1926.451 (a) (14)	Scaffold planking shall extend over their end support not less than 6 inches and not more than 12 inches.			x	
1926.602 (a) (9)	Bi-directional earth moving equipment shall have audible alarms.	x			
1926.451 (a)	Scaffolding shall be erected, moved, dismantled or altered under the supervision of a competent person.			x	
1926.550 (b) (2)	Cranes, crawler, truck or locomotive, shall meet the design, testing, maintenance, and operation per ANSI B30.5_1968. The most recent certification shall be on file until a new one is prepared.			x	

Newman continued excavation and earth work in S. E. zone. A small amount of darker soil was uncovered and buried with clean fill near the east gate.

CVE fabricators poured foundations g-structures in S.E. zone.

Owen Wahlstrom came in to cover for Russ Johnson.

Neil Love off today.

4 pumps at compass points monitored air throughout the day.



determined necessary



3RD WEST SUBSTATION REMEDIATION PROJECT

HEALTH SAFETY MANAGER (HSM)

	<u>DAILY CHECKLIST</u>
DATE:	10/27/11
a 1	
<u>General</u> ☑	
	Work area Health and Safety Inspection
NA	Review and if necessary update Activity Hazard Analyses (AHA) based on planned site
NA	activities for the day Safety Planning or "Tailgate" mandatory meeting for all employees and contractors prior
NA	to commencement of any site work. Instruction, review hazards, health & safety issues and any modifications to the CSHASP
NA	Site hazard and safety instruction for all first time employees, contractors or visitors
NA NA	Complete Employee Meeting Record Form B (where applicable
NA NA	Document required Respirator Training completion with Form H
NA	Record times and numbers of dump trucks and trailers as they leave the site with
- 1	contaminated material.
NA	Confirm return of waste material manifest documents for each load with site
	manager.
NA Com	plete all CSHASP Forms (for applicable activities planned for that day)
NA	Illness/Injury Report Form A
NA	Site-Specific Training Record Form C
NA	Hot Work Permit Form D
NA	Trench/Evacuation Permit Form E
NA	Combined Space Entry Permit From F
NA	Exclusion zone operations are practiced as instructed.
	NA Decontamination unit is working properly.
	NA Workers are using decontamination unit as instructed.
	NA Workers use personal protective equipment properly.
\square	Set air samples at cardinal compass points around exclusion zone. Check
	throughout the day to ensure proper operation.
Ø	Observe control measures for dust and fugitive materials i.e. watering excavation sites and track out prevention.
\square	Review sign-in/sign-out log throughout and at the end of the workday.
\square	Secure the site at the end of the workday
Samplin	<u>.</u> <u>e</u>
NA Soil	Confirmation sampling for any newly excavated areas
	Stationary Air Monitoring during contaminated soil removal around the perimeter of the exclusions zone
NA	Personal Breathing Zone Monitoring on personnel conducting contaminated dust and soil removal
NA	Digitally photograph each sample location and at any place field sampling personnel





NA Electronically file photo files into the on-site database ablaComplete Field Documentation \checkmark Field Sample Data Sheets (FSDS) Logbook NA On-site computer database Label each sample media with a unique number abla \checkmark Seal sample(s) in zip lock plastic bags ablaComplete and include Chain of Custody (COC) Form required for shipping of samples to appropriate laboratory Package samples for transport IAW SOP 2-1, Packaging and Shipping of Environmental ablaSamples NA Review and disseminate sample results as received from the laboratories to Project Manager and other appropriate managers and employees NA Electronically file sample reports into on-site database



Project: 3rd West Sub Station Location: 3rd West, 1st South, SLC Survey Conducted By: Justin Kargis		Date: <u>10/28/11</u> Job Number:						
				In Compliance	Out of Compliance	N/A	Corrective Action Taken and	
Standard .	Title				D a te			
1926.59	Hazard Communication P rogram, List of Chemicals, Training, MSDSs.			x				
1926.500 (b) & (d) (old standard)	Guardrails on open sided floors, floor holes and runways.			x				
1926.404 (b)	Ground fault circuit interrupters or an assured equipment grounding conductor program in use.	x						
1926.451 (b)	The employer shall instruct each employee in the recognition and avoidance of unsafe conditions.			х				
1926.451 (d)	Tubular welded scaffolds shall be properly braced so that they are plumb, square and rigid; legs on plumb, adjustable, mud sills, etc. to support the maximum load; guardrails and toe boards shall be installed.			х				
	III. demotostica subsection is a second	l						

1926.100 (a)

danger of head injury.

·		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title .				Date
1926.652 (a) (1)	Excavation protective systems; examination by competent person when less than 5 feet in depth.			х	
1926.20 (b) (2)	Employer responsibility to initiate and maintain safety and health programs.	x			
1926.20 (b) (1)	Employer responsibility to provide for frequent and regular inspections by designated competent persons.			x	
1926.451 (e)	Manually propelled scaffolds shall have tight planking for the full width, platforms secured, ladder or stairway provided, suitable footing, stand plumbs, wheels locked, guardrails and toe boards.			x	
1926.1052 (c) (1)	Stair rail and handrail along each unprotected edge.			x	
1926.25 (a)	D ebris, scrap lumber with protruding nails, not cleared for work areas, stairs and around structures.			×	
1926.50	First aid shall be available in the absence of an infirmary, or other that is reasonably accessible; first aid supplies shall be accessible and telephone numbers posted.			x	,
1926.451 (a) (13)	Scaffolding safe access not provided by ladder or equivalent.			x	
1926.651 (k) (1)	Excavations, protective systems, inspected daily by a competent person and as needed.			x	
1926.403 (b)	Employer shall ensure electrical equipment is free from recognized hazards, is suitable, used in accordance with the listing, labeling or certification.	x			

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 (a)	Scaffolding shall have guardrails and toe boards when more than 10 feet high and when less than 45 inches of work space.			х	
1926.405 (g) (2)	Flexible cords shall be used without splice or tap; strain relief shall be provided.			х	
1926.405 (b)	Electrical boxes, fittings shall have covers, faceplates or canopy and holes shall be smooth where cords pass through; and unused openings in cabinets/boxes shall be closed.	X			
1926.701 (b)	Reinforcing steel onto which employees could fall shall be guarded.			x	
1926.1053 (b) (1)	Portable ladder side rails extend at least 3 feet or be secured at top.	ì		х	
1926.651 (j) (2)	Excavations shall have materials or equipment placed at least 2 feet from the edge.			х	
1926.651 (c) (2)	Excavations shall have a safe means of egress such as ladders, ramps, etc.	x			
1926.150 (c) (1)	Portable fire fighting equipment shall be provided and extinguishers shall be inspected periodically.	-		х	
1926.102 (a)	Eye and face protection shall be provided.	х			
1926.300 (b) (2)	Guards for power tools shall be used and moving parts of equipment shall be guarded.	х			
1926.350 (a)	Oxygen cylinders in storage shall be separated from fuel gas cylinders by at least 20 feet or a ½ fire resistance barrier.			х	

Standard	<i>Title</i>	☐ In Compliance	Out of Compliance	N/A	Corrective Action Taken and Date
		<u> </u>		 	Dute
1926.405 (a) (2) (ii) (e) & (f)	Temporary lights shall be protected from breakage, not suspended by their cords and extension cord.			X	
1926.405 (a) (2) (ii) (j)	Extension cords used with portable electric tools shall be of three wire type and designed for hard or extra hard usage.	X			
1926.105 (a)	Workplaces more than 25 feet above the ground or water shall have safety nets when ladder, safety line/belts, temporary floors, scaffolds, catch platform are not practical.			x	
1926.1051 (a)	Stairway or ladder shall be provided at all access points where there is a break in elevation of 19 inches or more.			х	
1926.451 (a)	Scaffolding footing or anchorage shall be sound, rigid and capable of carrying the maximum intended load.			х	
1926.500 (c) (1) (old standard)	Wall opening shall be guarded.			x	
1926.404 (f)	Electrical equipment connected by cord and plug shall be grounded except if there is an isolating transformer or the tool is double insulated.	х			
1926.556 (b)	When working from an aerial lift, a full body harness and lanyard attached to the boom or basket.			x	
1926.501 (b) (1) (new standard)	Guardrails, safety nets or personal fall arrest system shall be used at 6 feet or more.			х	·

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title			\Box	D a te
1926.451 (a) (14)	Scaffold planking shall extend over their end support not less than 6 inches and not more than 12 inches.			x	
1926.602 (a) (9)	Bi-directional earth moving equipment shall have audible alarms.	х			~
1926.451 (a)	Scaffolding shall be erected, moved, dismantled or altered under the supervision of a competent person.			x	
1926.550 (b)	Cranes, crawler, truck or locomotive, shall meet the design, testing, maintenance, and operation per ANSI B30.5_1968. The most recent certification shall be on file until a new one is prepared.			х	

Newman continued excavation and earth work in S. E. zone, ended workday around 2pm.

CVE fabricators poured floor for control building in zone 1.

Owen Wahlstrom on site to cover for Russ Johnson.

Neil Love off today.

4 pumps at compass points monitored air throughout the day.





3RD WEST SUBSTATION REMEDIATION PROJECT

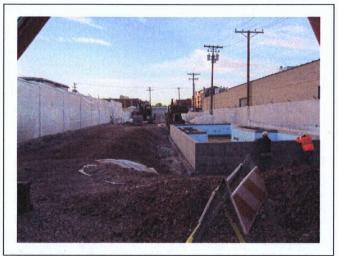
HEALTH SAFETY MANAGER (HSM)

	DAILY CHECKLIST
DATE:	10/28/11
Comerci	
<u>General</u> ☑	Work area Health and Safety Inspection
NA	Review and if necessary update Activity Hazard Analyses (AHA) based on planned site
IIA	activities for the day
NA	Safety Planning or "Tailgate" mandatory meeting for all employees and contractors prior to commencement of any site work. Instruction, review hazards, health & safety issues and any modifications to the CSHASP
NA	Site hazard and safety instruction for all first time employees, contractors or visitors
NA	Complete Employee Meeting Record Form B (where applicable
NA	Document required Respirator Training completion with Form H
NA .	Record times and numbers of dump trucks and trailers as they leave the site with contaminated material.
NA	Confirm return of waste material manifest documents for each load with site manager.
NA Comp	lete all CSHASP Forms (for applicable activities planned for that day)
NA	Illness/Injury Report Form A
NA	Site-Specific Training Record Form C
NA	Hot Work Permit Form D
NA	Trench/Evacuation Permit Form E
NA	Combined Space Entry Permit From F
NA	Exclusion zone operations are practiced as instructed.
	NA Decontamination unit is working properly.
•	NA Workers are using decontamination unit as instructed.
	NA Workers use personal protective equipment properly.
	Set air samples at cardinal compass points around exclusion zone. Check
· <u></u>	throughout the day to ensure proper operation.
	Observe control rneasures for dust and fugitive materials i.e. watering excavation sites and track out prevention.
	Review sign-in/sign-out log throughout and at the end of the workday.
	Secure the site at the end of the workday
Sarnpling	· · · · · · · · · · · · · · · · · · ·
NA Call C	and marchine and marchine for any marchy assessment of angel
NA Soil C ☑	onfirmation sampling for any newly excavated areas Stationary Air Monitoring during contaminated soil removal around the perimeter of the exclusions zone
NA	Personal Breathing Zone Monitoring on personnel conducting contaminated dust and soil removal
NA	Digitally photograph each sample location and at any place field sampling personnel determined necessary





NA Electronically file photo files into the on-site database $\sqrt{}$ Complete Field Documentation $\sqrt{}$ Field Sample Data Sheets (FSDS) $\sqrt{}$ Logbook NA On-site computer database $\sqrt{}$ Label each sample media with a unique number \square Seal sample(s) in zip lock plastic bags Complete and include Chain of Custody (COC) Form required for shipping of samples to $\sqrt{}$ appropriate laboratory ablaPackage samples for transport IAW SOP 2-1, Packaging and Shipping of Environmental Samples NA Review and disseminate sample results as received from the laboratories to Project Manager and other appropriate managers and employees NA Electronically file sample reports into on-site database



РНОТО 1



РНОТО 2



РНОТО 3



РНОТО 4

R&R Environmental, Inc.

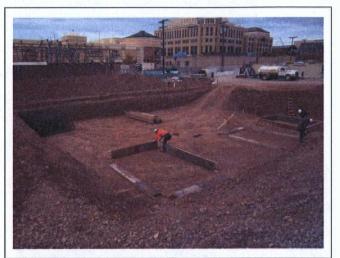
47 West 9000 South, Suite #2, Sandy, Utah 84070 (801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:

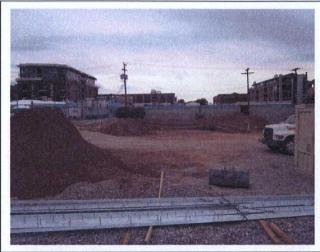
DESIGNED BY:	SCALE:	REVIEWED BY: DCR	
DRAWN BY: JRWC	DATE: 10/24/2011	FILE:	

SITE PHOTOGRAPHS

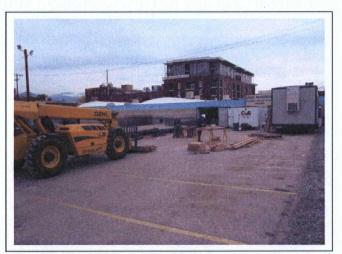




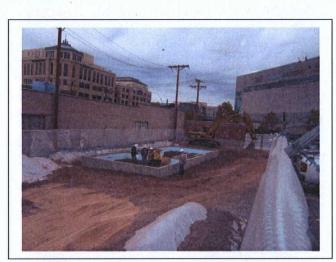
РНОТО 1



РНОТО 2



РНОТО 3



РНОТО 4

R&R Environmental, Inc. 47 West 9000 South, Suite #2, Sandy, Utah 84070 (801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:

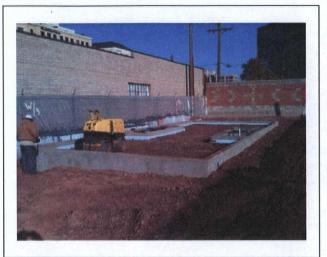
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DRAWN BY: JRWC	DATE: 10/25/2011	FILE:	

SITE PHOTOGRAPHS

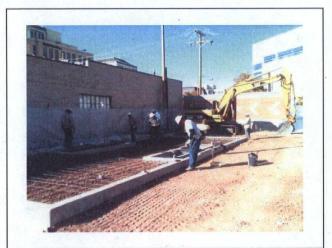




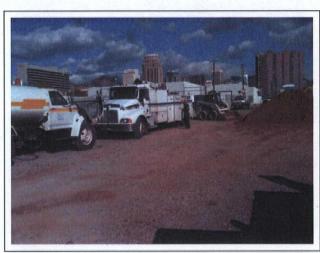
РНОТО 1



РНОТО 2



РНОТО 3



РНОТО 4

R & REnvironmental, Inc.
47 West 9000 South, Suite #2, Sandy, Utah 84070
(801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:

DESIGNED BY:	SCALE:	REVIEWED BY: DCR	
DRAWN BY: JMK	DATE 10/26/2011	FILE:	

SITE PHOTOGRAPHS





РНОТО 1



РНОТО 2



РНОТО 3



РНОТО 4

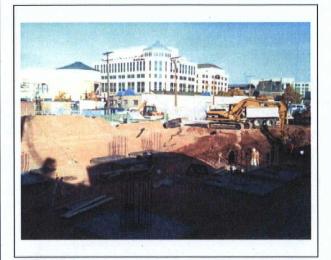
R & REnvironmental, Inc.
47 West 9000 South, Suite #2, Sandy, Utah 84070
(801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:

DESIGNED BY:	SCALE:	REVIEWED BY: DCR	
DRAWN BY: JMK	DATE 10/27/2011	FILE:	

SITE PHOTOGRAPHS





РНОТО 1



РНОТО 2



РНОТО 3



РНОТО 4

R & REnvironmental, Inc.
47 West 9000 South, Suite #2, Sandy, Utah 84070
(801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:

DESIGNED BY:	SCALE:	REVIEWED BY: DCR	
DRAWN BY: JMK	DATE 10/28/2011	FILE:	

SITE PHOTOGRAPHS



PACIFICORP OPERATIONS - Field Construction Representative Daily Log Third West Sub - Rebuild PROJECT NAME: DATE: Monday, October 24, 2011 3000078050 / 10035803 MAIN CONTRACTOR: Cache Valley Electric PO & Work Order NO.: Crew Stop Time: Crew Start Time: 6:40 17:20 Tot Hrs mns: 10:40 17:25 6:45 FCR Start Time: FCR Stop Time: 10:40 Tot Hrs mns: Use military time format 00:00 **WEATHER CONDITIONS:** Sunny - 65 degrees DESCRIPTION: (work performed, general comments, instructions to contractor, # of crew members onsite.) R&R set up four monitors. CVE crew broke off the form ties on the foundation and grouted the voids, tied rebar for the spread footings. Newman backfilled the soft spot in the excavation and is working on backfilling inside and outside the new building foundation. Newman brought the inside grade up to the grade where the conduits run from vault to vault and CVE has installed the ten conduits. Newman will the backfill them with sand to minimize the potential for breaking the conduits. PSI came by to test the soft spot and has OK'd It for placement spread footings. They will be back later in the week to witnesss the completion of the entire excavation. H&E equipment came on-site to repair a hydraulic leak on the forklift. After a discussion with Brent Wiggins I authorized Newman to backfill the west side of the pull box with sand in the bottom of the void, but to make sure that structural fill is used from a grade of 6" under and around the fence posts. CVE Safety Director stopped by to visit with his folks and review site safety and housekeeping on the site. Contractors: CVE = 8, R&R = 1, Wilding = 1, **PS**I = 1. IF WORKING IN ENERGIZED SUBSTATION: Dispatcher login, name and time: Al Swinski 0710 Barry Nielson 1725 Dispatcher logout, name and time: IMMEDIATE CORRECTIVE ACTION TAKEN: DISCREPANCIES: DELAYS OR LOST TIME ENCOUNTERED:

EQUIPMENT (working, delivered, idle):

Portable toilet (2), forklift, 2 dumpsters, office trailer, conex, exclusion zone conex (2), water wagon, portable wash-down structure, trackhoe, trackhoe w/pavement breaker, mini-ex, bobcat, power washer, water truck, compactor, CVE tool trailer, crew truck, backhoe.

OSHA Recordable Safety Incidents: Reported by: Time:



Russ Johnson

PACIFICORP OPERATIONS - Field Construction Representative Daily Log

PROJECT NAME:	Third Wes	st Sub - Rebuild	DATE: Tuesda	ay, October 25	5, 2011
PO & Work Order NO. :	30000780	050 / 10035803	MAIN CONTRACTOR:	Cache Valle	y Electric
Crew Start Time:	6:45	Crew Stop Time:		Tot Hrs mns:	17:15
FCR Start Time:	6:45	FCR Stop Time:		Tot Hrs mns:	17:15
Use military time format 00:00				-	
WEATHER CONDITIONS:		Clou	dy - 50 degrees		
DESCRIPTION: (work perfe	ormed deneral d	comments instructions to	contractor # of crew me	mhers onsite	,
R&R set up four monitors. CVE					
conduits running between the va CVE = 8, R&R = 1, Wilding = 1	ults in the control b				
			4 *		
					i
				-	
·					i
IF WORKING IN ENERGIZE					
Dispatcher login, name and time		645			
Dispatcher logout, name and time	ne:		MMEDIATE CORRECTIV	E ACTION TA	VEN.
DISCREPANCIES:			INIMEDIA IE CORRECTIV	E ACTION TA	NEN:
		·			
	···		<u> </u>		
DELAYS OR LOST TIME EI	NCOUNTERED:				
EQUIPMENT (working, deli	vered idle):				
Portable toilet (2), forklift, 2 dumpste		x . exclusion zone conex (2). water	wagon, portable wash-down stru	cture, trackhoe, tra	ackhoe
w/pavement breaker, mini-ex, bobca					
		·			
OSHA Recordable Safety II	ncidents:	·	Reported	by:	Time:
				I	
		-			



PACIFICORP OPERATIONS - Field Construction Representative Dally Log PROJECT NAME: Third West Sub - Rebuild DATE: Wednesday, October 26, 2011 PO & Work Order NO.: 3000078050 / 10035803 MAIN CONTRACTOR: Cache Valley Electric Crew Start Time: 6:50 Crew Stop Time: 17:20 Tot Hrs mns: 10:30 FCR Start Time: 6:40 FCR Stop Time: 17:20 Tot Hrs mns: 10:40 Use military time format 00:00 **WEATHER CONDITIONS:** DESCRIPTION: (work performed, general comments, instructions to contractor, # of crew members onsite.) R&R set up four monitors. CVE continues tying rebar and making forms for the spread footings. CVE laid out six of the eight spread footings in the excavated area andcompleted grading forms and placing rebar. CVE placed rebar for the floor of the control building and wil place the unistrut inserts for the floor on Thursday. CVE expects to pour the mats for the six spread footings at noon on Thursday and the floor of the control building at 11:00 on Friday. Newman completed backfilling inside the control building and continues backfilling the outside of the building foundation. Wagstaff Crane representative came by today to look at the pick for the Trachte building on November 7. Contractors: CVE = 8, R&R = 1, Wilding = 1. IF WORKING IN ENERGIZED SUBSTATION: Dispatcher login, name and time: Al Swinski 0640 Dispatcher logout, name and time: Jim Bowman 1720 DISCREPANCIES: **IMMEDIATE CORRECTIVE ACTION TAKEN: DELAYS OR LOST TIME ENCOUNTERED:** Water truck was down today, MESCO came by in the PM and repaired it.

EQUIPMENT (working, delivered, idle):

Portable toilet (2), forklift, 2 dumpsters, office trailer, conex, exclusion zone conex (2), water wagon, portable wash-down structure, trackhoe, trackhoe w/pavement breaker, mini-ex, bobcat, power washer, water truck, compactor, CVE tool trailer, crew truck, backhoe.

OSHA Recordable Safety Incidents: Reported by: Time:



Russ Johnson

Field Construction Representative

PACIFICORP OPERATIONS - Field Construction Representative Daily Log Thursday, October 27, 2011 PROJECT NAME: Third West Sub - Rebuild DATE: 3000078050 / 10035803 MAIN CONTRACTOR: Cache Valley Electric PO & Work Order NO.: Tot Hrs mns: **Crew Start Time:** 6:50 Crew Stop Time: 16:30 6:40 16:30 Tot Hrs mns: 9:50 FCR Start Time: FCR Stop Time: Use military time format 00:00 10:00, 42F, 0 wind, 70% high thin cloud cover **WEATHER CONDITIONS:** DESCRIPTION: (work performed, general comments, instructions to contractor, # of crew members onsite.) R&R set up four monitors. CVE set unistrut embeds in the control building floor and completing preparations for pouring the six spread footing mats. Newman completed backtilling the outside of the control building and moved over to the excavation area for the two additiona spread footings and the east transformer. Contractors: CVE = 7, R&R = 1, Wilding = 1. Six spread footers poured. IF WORKING IN ENERGIZED SUBSTATION: Dispatcher login, name and time: Al Swinski 0658 Dispatcher logout, name and time: Kim Batt 16:11 IMMEDIATE CORRECTIVE ACTION TAKEN: DISCREPANCIES: DELAYS OR LOST TIME ENCOUNTERED: EQUIPMENT (working, delivered, idle): Portable toilet (2), forklift, 2 dumpsters, office trailer, conex, exclusion zone conex (2), water wagon, portable wash-down structure, trackhoe, trackhoe



OSHA Recordable Safety Incidents:

w/pavement breaker, mini-ex, bobcat, power washer, water truck, compactor, CVE tool trailer, crew truck, backhoe.

Russ Johnson/Owen Wahlstrom

Field Construction Representative

Reported by:

Time:

PACIFICORP OPERATIONS - Field Construction Representative Daily Log Third West Sub - Rebuild DATE: Thursday, October 28, 2011 PROJECT NAME: PO & Work Order NO.: 3000078050 / 10035803 MAIN CONTRACTOR: Cache Valley Electric Crew Start Time: 7:00 Crew Stop Time: 17:30 Tot Hrs mns: 10:30 17:30 7:00 10:30 FCR Start Time: FCR Stop Time: Tot Hrs mns: Use military time format 00:00 **WEATHER CONDITIONS:** 6:40, 38F, 0 wind, stars in the sky DESCRIPTION: (work performed, general comments, instructions to contractor, # of crew members onsite.) R&R set up four monitors. CVE stripping forms, poured floor for control building. Newman working on excavation for two additional spread footings, the east transformer, removing spoils. Contractors: CVE = 8, R&R = 1, Wilding = 1, Newman=4. IF WORKING IN ENERGIZED SUBSTATION: Gus Montinez 6:40 Dispatcher login, name and time: Dispatcher logout, name and time: Kim Batt 17:30 DISCREPANCIES: **IMMEDIATE CORRECTIVE ACTION TAKEN: DELAYS OR LOST TIME ENCOUNTERED:**

EQUIPMENT (working, delivered, idle):

Portable toilet (2), forklift, 2 dumpsters, office trailer, conex, exclusion zone conex (2), water wagon, portable wash-down structure, trackhoe, trackhoe w/pavement breaker, mini-ex, bobcat, power washer, water truck, compactor, CVE tool trailer, crew truck, backhoe, dump truck.

OSHA Recordable Safety Incidents: Reported by: Time:



Russ Johnson/Owen Wahlstrom

Field Construction Representative

PACIFICORP OPERATIONS - Field Construction Representative Daily Log PROJECT NAME: Third West Sub - Rebuild DATE: Monday, October 24, 2011 PO & Work Order NO.: 3000078050 / 10035803 MAIN CONTRACTOR: Cache Valley Electric Crew Start Time: 6:40 Crew Stop Time: 17:20 Tot Hrs mns: 10:40 17:25 FCR Start Time: 6:45 FCR Stop Time: Tot Hrs mns: Use military time format 00:00 **WEATHER CONDITIONS:** Sunny - 65 degrees DESCRIPTION: (work performed, general comments, instructions to contractor, # of crew members onsite.) R&R set up four monitors. CVE crew broke off the form ties on the foundation and grouted the voids, tied rebar for the spread footings. Newman backfilled the soft spot in the excavation and Is working on backfilling inside and outside the new building foundation. Newman brought the inside grade up to the grade where the conduits run from vault to vault and CVE has Installed the ten conduits. Newman will the backfill them with sand to minimize the potential for breaking the conduits. PSI came by to test the soft spot and has OK'd it for placement of spread footings. They will be back later in the week to witnesss the completion of the entire excavafion. H&E equipment came on-site to repair a hydraulic leak on the forklift. After a discussion with Brent Wiggins I authorized Newman to backfill the west side of the pull box with sand in the bottom of the void, but to make sure that structural fill is used from a grade of 6" under and around the fence posts. CVE Safety Director stopped by to visit with his folks and review site safety and housekeeping on the site. Contractors: CVE = 8, R&R = 1, Wilding = IF WORKING IN ENERGIZED SUBSTATION: Dispatcher login, name and time: Al **S**winski 0710 Dispatcher logout, name and fime: Barry Nielson 1725 DISCREPANCIES: IMMEDIATE CORRECTIVE ACTION TAKEN: DELAYS OR LOST TIME ENCOUNTERED:

EQUIPMENT (working, delivered, idle):

Portable toilet (2), forklift, 2 dumpsters, office trailer, conex, exclusion zone conex (2), water wagon, portable wash-down structure, trackhoe, trackhoe w/pavement breaker, mini-ex, bobcat, power washer, water truck, compactor, CVE tool trailer, crew truck, backhoe.

OSHA Recordable Safety Incidents: Reported by: Time:



Russ Johnson

PACIFICORP OPERATIONS - Field Construction Representative Daily Log PROJECT NAME: Third West Sub - Rebuild Tuesday, October 25, 2011 DATE: PO & Work Order NO. : 3000078050 / 10035803 MAIN CONTRACTOR: Cache Valley Electric 6:45 Crew Start Time: Crew Stop Time: **Tot Hrs mns:** 17:15 FCR Start Time: FCR Stop Time: **Tot Hrs mns:** 17:15 6:45 Use military time format 00:00 WEATHER CONDITIONS: Cloudy - 50 degrees DESCRIPTION: (work performed, general comments, instructions to contractor, # of crew members onsite.) R&R set up four monitors. CVE continues tying rebar and making forms for the spread footings. Newman placed sand around the 6" conduits running between the vaults in the control building and continues backtilling inside and outside the building foundation. Contractors CVE = 8 , R&R = 1, Wilding = 1. IF WORKING IN ENERGIZED SUBSTATION: Dispatcher login, name and time: Al Swinski 0645 Dispatcher logout, name and time: **DISCREPANCIES:** IMMEDIATE CORRECTIVE ACTION TAKEN: DELAYS OR LOST TIME ENCOUNTERED: EQUIPMENT (working, delivered, idle):

Portable toilet (2), forklift, 2 dumpsters, office trailer, conex, exclusion zone conex (2), water wagon, portable wash-down structure, trackhoe, trackhoe

w/pavement breaker, mini-ex, bobcat, power washer, water truck, compactor, CVE tool trailer, crew truck, backhoe.

OSHA Recordable Safety Incidents:

Reported by: Time:



Russ Johnson

PACIFICORP OPERATIONS - Field Construction Representative Daily Log

PROJECT NAME:	Third We	st Sub - Rebuild	DATE: Wednesday, October 26, 20						
PO & Work Order NO. :	30000780	050 / 10035803	MAIN CONTRACTOR	: Cache Valle	y Electric				
Crew Start Time:	6:50	Crew Stop Time:	17:20	Tot Hrs mns:	10:30				
FCR Start Time:	6:40	FCR Stop Time:	17:20	Tot Hrs mns:	10:40				
Use military time format 00:0		_	•						
WEATHER CONDITIONS:		 .							
		comments, instructions to							
footings in the excavated area place the unistrut inserts for the floor of the control building at 1	andcompleted gradin e floor on Thursday. 1:00 on Friday. N ew pstaff Crane represen	ear and making forms for the spr ng forms and placing rebar. CVI CVE expects to pour the mats forman completed backfilling insidentative came by today to look at	E placed rebar for the floor o or the six spread footings at e the control building and co	f the control build noon on Thursda ntinues backtillin	ding and wil ay and the ng the outside				
IF WORKING IN ENERGIZ Dispatcher login, name and tim									
Dispatcher logout, name and ti									
DISCREPANCIES:	ino. John Bowman		MMEDIATE CORRECTIV	E ACTION TA	KEN:				
DELAYS OR LOST TIME E	NCOUNTERED:	L							
Water truck was down today, MES	CO came by in the PM	and repaired it							
	ters, office trailer, conex	x , exclusion zone conex (2), water ver truck, compactor, CVE tool trailer,		cture, trackhoe, tra	ackhoe				
OSHA Recordable Safety	Incidents:	•	Reported	by:	Time:				
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Russ Johnson

Field Construction Representative

PACIFICORP OPERATIONS - Field Construction Representative Daily Log Third West Sub - Rebuild Thursday, October 27, 2011 PROJECT NAME: PO & Work Order NO.: 3000078050 / 10035803 MAIN CONTRACTOR: Cache Valley Electric 6:50 Crew Start Time: Crew Stop Time: 16:30 Tot Hrs mns: 16:30 FCR Start Time: 6:40 FCR Stop Time: Tot Hrs mns: Use military time format 00:00 **WEATHER CONDITIONS:** 10:00, 42F, 0 wind, 70% high thin cloud cover DESCRIPTION: (work performed, general comments, instructions to contractor, # of crew members onsite.) R&R set up four monitors. CVE set unistrut embeds in the control building floor and completing preparations for pouring the six spread footing mats. Newman completed backtilling the outside of the control building and moved over to the excavation area for the two additional spread footings and the east transformer. Contractors: CVE = 7, R&R = 1, Wilding = 1. Six spread footers poured. IF WORKING IN ENERGIZED SUBSTATION: Dispatcher login, name and time: Al Swinski 0658 Dispatcher logout, name and time: Kim Batt 16:11 **DISCREPANCIES: IMMEDIATE CORRECTIVE ACTION TAKEN:** DELAYS OR LOST TIME ENCOUNTERED:

EQUIPMENT (working, delivered, idle):

Portable toilet (2), forklift, 2 dumpsters, office trailer, conex, exclusion zone conex (2), water wagon, portable wash-down structure, trackhoe, trackhoe w/pavement breaker, mini-ex, bobcat, power washer, water truck, compactor, CVE tool trailer, crew truck, backhoe.

OSHA Recordable Safety Incidents: Reported by: Time:



PACIFICORP OPERATIONS - Field Construction Representative Daily Log PROJECT NAME: Third West Sub - Rebuild DATE: Thursday, October 28, 2011 3000078050 / 10035803 PO & Work Order NO.: MAIN CONTRACTOR: Cache Valley Electric **Crew Start Time:** Crew Stop Time: 17:30 Tot Hrs mns: 7:00 17:30 FCR Start Time: FCR Stop Time: Tot Hrs mns: 10:30 Use military time format 00:00 **WEATHER CONDITIONS:** 6:40, 38F, 0 wind, stars in the sky DESCRIPTION: (work performed, general comments, instructions to contractor, # of crew members onsite.) R&R set up four monitors. CVE stripping forms, poured floor for control building. Newman working on excavation for two additional spread footings, the east transformer, removing spoils. Contractors: CVE = 8, R&R = 1, Wilding = 1, Newman=4. IF WORKING IN ENERGIZED SUBSTATION: Dispatcher login, name and time: Gus Montinez 6:40 Dispatcher logout, name and time: Kim Batt 17:30 DISCREPANCIES: IMMEDIATE CORRECTIVE ACTION TAKEN: DELAYS OR LOST TIME ENCOUNTERED:

EQUIPMENT (working, delivered, idle):Portable toilet (2), forklift, 2 dumpsters, office trailer.

Portable toilet (2), forklift, 2 dumpsters, office trailer, conex, exclusion zone conex (2), water wagon, portable wash-down structure, trackhoe, trackhoe w/pavement breaker, mini-ex, bobcat, power washer, water truck, compactor, CVE tool trailer, crew truck, backhoe, dump truck.

OSHA Recordable Safety Incidents: . Reported by: Time:



Russ Johnson/Owen Wahlstrom

Field Construction Representative



October 26, 2011

Laboratory Code:

RES

Subcontract Number:

NA

Laboratory Report: Project # / P.O. # RES 223070-1 None Given

Project Description:

3rd West Substation-

PacfiCorp

David Roskelley R & R Environmental 47 West 9000 South #2 Sandy UT 84070

Dear Customer,

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 223070-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Jeanne Spencer Orr

President

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-0015

TABLE I. TEM AIR FILTER SAMPLE DATA AND ANALYTICAL RESULTS

RES Job Number:

RES 223070-1

Client:

R & R Environmental

Client Project Number / P.O.: None Given

Client Project Description:

3rd West Substation-PacfiCorp

Date Samples Received:

October 25, 2011

Analysis Type:

TEM, AHERA

Turnaround:

24 Hour

Date Samples Analyzed:

October 25, 2011

Client ID Number	Lab ID Ni	umber	Area Analyzed	Air Volume Sampled	Number of Asbestos Structures Detected	Analytical Sensitivity	Asbestos Concentration	Filter Loading
			(mm²)	(L)		(s/cc)	(s/cc)	(s/mm²)
3W-102411-N	EM	814325	0.0770	1106	ND	0.0045	BAS	BAS
3W-102411-S	EM	814326	0.0770	1116	ND	0.0045	BAS	BAS
3W-102411-E	EM	814327	0.0770	1112	ND	0.0045	BAS	BAS
3W-102411-W	EM	814328	0.0770	1112	ND	0.0045	BAS	BAS
Blank	EM	814329	NA	0	NA			
Blank	EM	814330	NA	0	NA			

NA = Not Analyzed

Filter Material = Mixed Cellulose Ester

ND = None Detected

Filter Diameter = 25 mm -

BAS = Below Analytical Sensitivity

Effective Filter Area = 385 sq mm

Average Grid Opening in mm² = 0.011

DATA QA

Due Date: 10 · ZU

Due Time: 8 35

REILAB RESERVBITS ENVIRONMENTAL, INC... 5801 Logen St. Denver, CO 80216 • Ph; 303 864-1986 • Fax 303-477-4275 • Toll Free :866 RESI-ENV

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Special Ins	tructiona:						•	A - AHERA, ob-quant, Mic	M - 7400A	TALS - A	RCRA B, TCLP, Welding Furne,	Salmonella: +/	Listeria:	Aerobic Plate Count: E.coli: +/- or Qua	Cofforms:	Y&M: +	Modd: +/-, Identiffication, Quantificati MPLER'S INITIALS OR OTHER NOTES	Sample Volume	Lestrice Code	Container	Date Collect	- 1	Time Collected		i ber (Laborai ka Only)	tory
Client sa	mple ID numbe	r (Sar	mple ID's mu	st be unique)			2	Sent de	PCH		5 8		MIC	Roak	OLOG	٧	\$	8	2 2	#	tntn/dd/		hh/mm a/p			
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NOTE: R	samples received: El will enelyze incomins des indicated on this Chair	semples based upon (mbn	mailon received te an analytical s	and will milbe read	I samples shall oneible for errors or with payment terms	ortrications in ea	iculsti	lont res	uiting fro	m the t	nsoevi8	cy of origi	inel de	ita 8y i a 1.5%	ttgning month	client ly inte	company r	epresente	dve ag	rees the	st aubmissi	lon af ti	he tollowing se	mpleg for req	uetted	_
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Attachment I

Key to Count Sheets Count Sheets Analytical Procedures

Structures identifications consist of an Asbestos Type followed by a Structure Type

Asbestos Type

Structure Types

Α	=	Amosite	F =	Fiber
An	=	Anthophyllite	B =	Bundle
C	=	Chrysotile	C =	Cluster
Cr	=	Crocidolite	M =	Matrix
Т	=	Tremolite		

ND = no structures detected

1 = other structure associated with a matrix

NAM = Non Asbestos Mineral

XGB = partly obscured by a grid bar

Sizing Conversion

1 length unit = 5 mm on screen = 0.278 micron

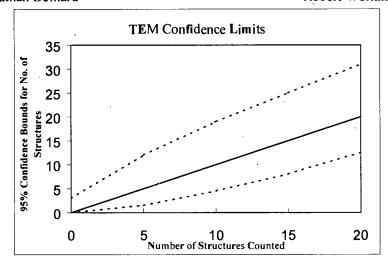
1.80 length units = 0.5 micron

18.0 length units = 5 microns

1 width unit = 1 mm on screen = 0.0556 micron

TEM Analysts

Jeanne S. Orr Nathan DelHierro Angela Heitger Jonathan Bemard Paul D. LoScalzo Mark Steiner Norberto Zimbleman Robert Workman



Upper and lower 95% confidence bounds for the number of structures counted assuming a Poisson distribution.

Reservoirs Environmental, Inc. TEM Asbeatos Structure Count

Laboratory name:	REI
Instrument	JEOL 100 N(S)
Voltage (KV)	100 KV
Magnification	· (2010) 10KX
Grid opening area (mm2)	0.011
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primaly filter area (mm2)	385
Secondary Filter Area (mm2)	N/A
QA Tyoe	not QA

Client :	RTR
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	1106
Date received by lab	10/25/11
Lab Job Number:	223070
Lab Sample Number:	814325

Analyzed by	11
Analysis date	10/25/11
Method (D=Dlrect, l=Indirect, IA=indirect, ashed)	P
Counting miles (ISO, AHERA, ASTM)	A41
Grid storage location	Month Analyzed
Scooe Alignment	Date Analyzed

F-Factor Calculation (Indirect Preps Only):					
Fraction of primary filter used					
Total Resuspension Volume (ml)					
Volume Applied to secondary filter (ml)					

Grid	Grid Opening	Structure Type	No. of Structures		Dimensions		Identification	Mineral Class				1 = yes, blank = no		
Cita			Primary	Total	Length	Width	identification	Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	45-3	MO												
. '	95-3	M					frop A	80/. mbo	+ 1-	3/. d	ebris			
	F5-3	MD					Pres	B ~A		/				
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Reservoire Environmental, Inc. TEM Asbestos Structure Count

Laboratory name:	REI
instniment	JEOL 100 N S
Voltage (KV)	100 KV
Magnification	20KX 10KX
Grid opening area (mm2)	0.011
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	· N/A
QA Tyce	no+ QA

Client :	RtR
Sample Type (A=Alr, D=Dust):	A
Air yolume (L) or dust area (cm2)	11 16
Date received by lab	10/25/11
Lab Job Numben	223070
Lab Samole Number:	814326

Analyzed by	1/1
Analysis date	10/25/11
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	D
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

F-Factor Calculation (Indirect Preps Only):							
Fraction of primary filler used							
Total Resuspension Volume (mi)							
Volume Applied to secondary filter (mt)							

Grid	Grid Opening	Structure	No. of Structures		Dimensions		Identification	Mineral Class			1 = yes, blank = no			
		Туре	Primary	Total	Length	Width		Amohibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	F5-3	M				· 								
! " 	25-3	M			. —		Prop	A 70%.	Ma	CA .	5-19 /. de	on 3		
	15-3	M					Prin	211						
	C5-4	ND						den Man	10/2	5/11				
b	T5-4	M												
	25-4	M												
	C5-4	M												
	·			•										
,														
			Phierral Linear Par											

Reservoirs Environmental, Inc. TElf Aabesios Structure Count

Laboratory name:	REI
instriment	JEOL 100 N S
Voltage (KV)	100 KV
Magnification	(20KX 10KX
Gild opening area (mnt2)	0.011
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primaty filter area (mm2)	385
Secondary Filter Area (mm2)	N/A
QA Type	not QA

Client :	RtR
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	11/12
Date received by lab	10/25/11
Lab Job Number:	223070
Lab Samole Number:	814327

Analyzed by	1/1
Analysis date	10/25/11
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	P
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scooe Alignment	Date Analyzed

P-Factor Calculation (Indirect Preps Only):					
Fraction of primary filter used					
Total Resuspension Volume (ml)					
Volume Applied to secondary filter (ml)					

Grid	Grid Opening	Structure	No. of St	ructures	Dimer	nsions	Identification	Mineral Class				1 = y	es, blank	= no
		Туре	Primary	Total	Length	Width		Anmhibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	42-3	ND							·					
	F2-3	NP			-		Pran A	70/. Mda	ict:	157.	dobris			
	82-3	ND					Prop B	~60]. IM	ac4	r5/.	debri3			
	(23	NO				,		Jen	Upri	n	0/25/11			
8	933	M					<u>.</u>							
	13-3	NO				ŕ								·
	F4-3	20				·								
,														
			i santa											

Reservoirs Environmental, Inc.
TEM Asbestos Structure Count

Laboratory name:	REI
instriment	JEOL 100 N S
Voltage (KV)	100 KV
Magnification	20KX 10KX
Grid opening area (mm2)	0.011
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	N/A
QA Type	no+ QA

Cliom :	RIR
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	1112
Date received by lab	10/25/11
Lab Job Numben	223070
Lab Samole Number.	814328

	
F-Factor Calculation (Indirect Pre	eps Only):
Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (mi)	

Analyzed by	-1K-
Analysis date	10/25/11
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	P
Counting rules (ISO, AHERA, ASTM)	A41
Grid storage location	Month Analyzed
Scooe Alignment	Oats Analyzed

Grid	Grid Opening	Opening Structure No. of Structures Dimensions Iden		Identification	Jentification Mineral Class				1 = ves, blank = no					
		Туре	Primary	Total	Length	Width		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	HS-3	NO											·	
	95-3	ND				Pr	ep A 9	0/ Invace	15/	, de	bn's			
	F5-3	25				Pr	erbn			-				
	85-3	N					1 er	Men 19	15/	11				
B	H4-1	25				s.		/					·	
	G4-1	ND												
	P4-1	ND									,			
,				·										
						<u> </u>			·	<u> </u>				Ray S-Inc

Analytical Procedures - AHERA

Transmission electron microscopy/energy dispersive X-ray spectrometry/selected area electron diffraction (TEM/EDX/SAED) was employed in the analysis of the samples, which were collected on 25 mm mixed cellulose ester air filters. A portion of each filter was collapsed with acetone and etched in a plasma asher. The etched filter was then coated with a thin layer of carbon in a carbon side down. The sample was then placed inside a condensation washer and treated with acetone to remove the filter matrix and expose any inert material.

For each sample, enough grid openings on a 200 mesh TEM grid are analyzed to ensure an analytical sensitivity of at least 0.005 structures/cc. A minimum of four grid openings from two preparations are analyzed for each sample. The grid openings are searched for fibrous structures which, if present are analyzed by SAED and/or EDX (elemental analysis). The AHERA protocol requires SAED confirmation of enough chrysotile asbestos structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures). Both SAED and EDX confirmation are required of enough amphibole structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures) per sample. Either SAED or EDX is required for the remaining asbestos structures of either type. The morphology of each structure is determined and the length and the diameter of any asbestos structures are recorded. Asbestos fibers, bundles, cluster and matrices were identified and recorded. The asbestos structures have been defined in AHERA as follows:

Fiber: is a structure having a minimum length greater than or equal to 0.5

micron with an aspect ratio of 5:1 or greater with substantially parallel

sides.

Bundle: is a structure composed of three or more fibers in parallel arrangement,

with each fiber closer than the diameter of one fiber.

Cluster: is a structure with fibers in random arrangements such that all fibers are

intermixed and no single fiber is isolated from the group.

Matrix: is a fiber or fibers with one end free and the other end embedded or

hidden by a particulate. The exposed fiber end must meet the fiber

definition given above.

If more than 50 asbestos structures are identified and confirmed on a sample, AHERA analysis may be terminated after completion of the grid opening, which contains the 50th structure. AHERA protocol requires the laboratory to reject any clearance sample which contains in excess of 25% total particulate loading or which appears to be unevenly loaded.

The AHERA protocol includes specific sampling requirements, including minimum numbers of samples and minimum air volumes. Specifically, the 70 structures/mm² clearance criteria is only allowed for sets five inside samples (collected in a group of 13 samples including: five outsides and three blanks) with volumes greater than 1200 liters (40 CFR Part 763, page 41894). Deviation from the AHERA sampling protocol may affect the validity of the analytical results. Analysis of samples collected by non-protocol methods are not accredited by NVLAP

Equations Used for Calculations

Area Analyzed, mm² = # GO counted x Average GO Area (mm)

Concentration, s/cc = $\frac{\text{\# Asbcstos Structures}}{\text{\# GO Counted}} \times \frac{1}{\text{Volume (L)}} \times \frac{\text{Eff. Filter Area (mm}^2)}{\text{Average GO area (mm}^2)} \times \frac{\text{IL}}{1000cc}$

Filter loading, s/mm² = # Asbestos structures Area Analyzed (mm²)

GO = TEM grid opening



October 27, 2011

Laboratory Code:

RES

Subcontract Number:

NA

Laboratory Report: Project # / P.O. #

RES 223142-1 None Given

Project Description:

Pacificorp- 3rd West Substation Rebuild

David Roskelley
R & R Environmental
47 West 9000 South #2

Sandy UT 84070

Dear Customer,

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 223142-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Jeanne Spencer Orr

President

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-0015

TABLE I. TEM AIR FILTER SAMPLE DATA AND ANALYTICAL RESULTS

RES Job Number:

RES 223142-1

Client:

R & R Environmental

Client Project Number / P.O.: None Given

Client Project Description:

Pacificorp- 3rd West Substation Rebuild

Date Samples Received:

October 26, 2011

Analysis Type:

TEM, AHERA

Turnaround:

24 Hour

Date Samples Analyzed:

October 27, 2011

Client ID Number	Lab ID N	umber	Area Analyzed	Air Volume Sampled	Number of Asbestos Structures Detected	Analytical Sensitivity	Asbestos Concentration	Filter Loading
			(mm²)	(L)		(s/cc)	(s/cc)	(s/mm²)
3W-10-25-11-N	EM	814778	0.0770	1162	ND	0.0043	BAS	BAS
3W-10-25-11-S	EM	814779	0.0770	1160	ND	0.0043	- BAS	BAS
3W-10-25-11-E	EM	814780	0.0770	. 1164	1	0.0043	0.0043	13.0
3W-10-25-11-W	EM	814781	0.0770	1162	ND	0.0043	BAS	BAS
Blank	EM	81478 2	NA	0	NA			
Blank	EM	814783	NA	0	NA	2510		

NA = Not Analyzed

Filter Material = Mixed Cellulose Ester

ND = None Detected

Filter Diameter = 25 mm

BAS = Below Analytical Sensitivity

Effective Filter Area = 385 sq mm

Average Grid Opening in mm² = 0.011

DATA QA

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-0015

TABLE II. SUMMARY OF ANALYTICAL DATA

RES Job Number:

RES 223142-1

Client:

R & R Environmental

Client Project Number / P.O.: None Given

Client Project Description:

Pacificorp- 3rd West Substation Rebuild

Date Samples Received:

October 26, 2011

Analysis Type:

TEM, AHERA

Turnaround:

24 Hour

Date Samples Analyzed:

October 27, 2011

Client ID Number	Lab ID Number		Asbestos Mineral	Asl	pestos Str	ucture Typ	es*	Structures >5 Microns in Length	**Excluded Structures	Asbestos Structures for	
				Fibers	Bundles	Clusters	Matrices			Concentration	
3W-10-25-11-N	ЕМ	814778	ND	0	0	0	0	0	0	0	
3W-10-25-11-S	EM	814779	ND	0	0	0	0	0	0	0	
3W-10-25-11-E	EM	814780	Chrysotile	1	0	0	0	0	0	1	
3W-10-25-11-W	EM	814781	ND	0	0	0	0	0	0	0	
Blank	EM	8 14 78 2	NA							•	
Blank	EM	8 14 78 3	NA								

^{*}See Analytical Procedure for definitions

^{**}C = Excluded from total due to lack of confirmation

^{**}L = Excluded from total for length less than 0.5 micron (AHERA only)

^{**}A = Excluded from total due to incorrect aspect ratio

ND = None Detected

Due Dete: 10.27
Due Time: 845

Reservoirs Environmental, Inc. 5801 Logan St Denver, CO 80216 - Ph: 303 894-1988 - Fex 308-477-4275 - Toll Free :848 REBI-ENV

Pager: 303-5(19-2004) INVOICE TO: (IF DIFFERENT) **COMTACT INFORMATION:** Ptwsw: ddress; Call/pegar roject Number and/or P.O. & DAVER PRENVIPO, COM Project De toription/Locations Ray Crisons - 3th World Substation How LAB NOTES: **VALID MATRIX CODES** ASBESTOS LABORATORY HOURS: Weekdays; 7am - 7pm REQUESTED ANALYSIS RUSH (Same Day) PRIORITY (Next Day) __STANDARD Bulk = B Air = A (Ruah PCM = 2hr, TEM = 6hr.) Dust = D Paint = P CHEMISTRY LABORATORY HOURS: Wcakdays: Sem - Spm Wipe a W Soll = S Metel(8) / Dust ___ RUSH ___ 24 hr. ___3-6 Day Swab = SW F = Food - AHERA, Level II, 7402, ISO, +4, Quant, quant, Micro-vac, ISO-Indirect Preps "Prior notification is Drinkina Water = DW Waste Water = WW RCRA 8 / Metala & WeMing Long report, Point Count __ RUSH ___ 5 day ___10 day required for RUSH Fume Scan / TCLP O = Other turnerounds.** "ASTM E1782 approved wipe media only" Organica 24 hr. ___ 3 day ___S Day MICROBIOLOGY LABORATORY HOURS: Weekdays: Sam - 5pm E.eoil 0167:H7, Coliforna, S.aureus ___ 24 hr. ___ 2 Day ___ 3-5 Day Salmonella, Listeria, E.cori, APC, Y a M ___ 43 Hr. ___3-5 Day Mold RUSH __ 24 Hr __ 48 Hr __ 3 Day __ S Day Short report, Sample Volume (L) / Area **Turnersund times setablish a laboratory priority, subject to laboratory votume and are not guarantssd. Additional fees apply for afternoure, weakende and holidaye.** Special instructions: EM Number (Leboratory Time Date Use Only) Collected Collected Client sample ID number (Sample ID's must be unique) mVmm e/o 3W-10-25-11-230 9 10 Number of samples received: (Additional samples shall be listed on attached long form.) NOTE; REI will analyze incoming symples based upon infernation miserved and will not be responsible for enous or optications in calculations requisited from the ineccuracy of original data. By signing clien/company representative agrees that submission of the following semples for requested enelysis as indicated op this Chain of Date/Time: Relinguished By: Sample Condition: On Ice Data Time: 10-26-1 Laboratory Use Only SAS Cairier Yes / No Yes) No Yee / No Temp. (Fº) Received By: Results: Phone Email Fax Contect Phone Email Fax Date Contact Initials Time Initials Date Time Initials Contact Phone Email Fax Date Time Contact Phone Email Fax Date Time Initials

Attachment I

Key to Count Sheets Count Sheets Analytical Procedures

Structures identifications consist of an Asbestos Type followed by a Structure Type

Asbestos Type

Structure Types

A = Amosite	F = Fiber
	• • • • • • • • • • • • • • • • • • • •
An = Anthophyllite	B = Bundle
C = Chrysotile	C = Cluster
Cr = Crocidolite	M = Matrix
T = Tremolite	

ND = no structures detected

= other structure associated with a matrix

NAM = Non Asbestos Mineral

XGB = partly obscured by a grid bar

Sizing Conversion

1 length unit = 5 mm on screen = 0.278 micron

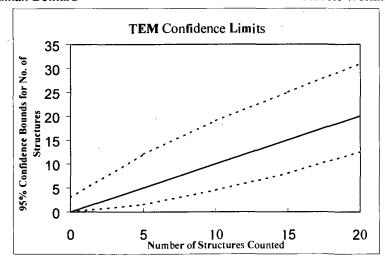
1.80 length units = 0.5 micron

18.0 length units = 5 microns

1 width unit = 1 mm on screen = 0.0556 micron

TEM Analysts

Jeanne S. Orr Nathan DelHierro Angela Heitger Jonathan Bemard Paul D. LoScalzo Mark Steiner Norberto Zimbleman Robert Workman



Upper and lower 95% confidence bounds for the number of structures counted assuming a Poisson distribution.

Reservoirs Environmental, tnc. TEM Asbestos Structure Count

	<u> </u>
Laboratory name:	REI
Instrument	JEOL 100(N) S
Voltage (KV)	100 KV
Maanifieation	(2010X)0KX
Grid opening area	0.011
(mm2)	0.011
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area	205
(mm2) Secondary Filter Area	385
,	
(mm2)	
OA Type	

Client :	Rak
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	1162
Date received by lab	10/25/11
Lab Job Number	223142
Lab Sample Number	814778
•	

Analyzed by	JB
Analysis date	10/26/4
Method (D=Direct, i=Indirect, IA=Indirect, astied)	ď
Counting rules (ISO, ANERA, ASTM)	AĤ
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

F-Factor Calculation (Indirect Preps Only):		
Fraction of primsry flitar used	·	
Totsi Resuspension Volume (mi)		
Volume Applied to Secondary filter (ml)		

Grid Grid Openi	Grid Opening	Structure	No. of Structures		Dimensions		Identification	Mineral Ciass			·	1 = yes, blank =		= no
	10/27/8	Туре	Primary	Totai	Length	Width		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EOS
A_	X4-3	W												
	64-3	MO				Pond	A	80 hem	tant	5	2 debris			
	F5-3	M		. '		Pin	13~	A		·				
ı	E5-3	100						k /	27/	<i>t</i>		·		
B	H5-1	$\Delta A \cap$					1	100 m						-
·	(95-1	_4.6\)												
	F5-1	11/>												
												·		
									·			•		
-														

Reservoire Environmental, Inc. TEM Asbestos Sozieture Coint

Laboratoty name:	REI
Instrument	JEOL 100(N) S
Voltage (KV)	100 KV
Magnification	20KX 10KX
Grid opening area (mm2)	0.011
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

Rak
A
1160
10/25/11
223142
814779

Analyzed by	JB
Analysis date	10/26/4
Method (D=Oirect, l=Indirect, IA=Indirect, ashed)	D
Counting rules (ISO, AHERA, ASTM)	Att
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

F-Factor Calculatkın (Indirect Preps Only):				
Fraction of primary filter used				
Total Resuspension Votume (ml)				
Volume Applied to secondary filter (ml)				

Grid Grid	Grid Opening	Structure	No. of Str	uctures	Dimer	nsions	Identification	Mineral Class				1 ≈ y	es, blank	= no
		Туре	Primary	Totai	Length	Wkdth		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	65-6	W	A w Religious Call						-	:				
•	F5-6	W												
	E5-6	NO				F	mp A	86%	nh	rf:	5% deb	<i>(</i> 35		
	15-6	M				()	mpB	80 %		nt	0/1/	, و		
3	E5-6	W			,		. (/	,	1				
	15-6	W						1B		10/27	/4	-		
	B5-6	M			·			10	7	<i>)</i> ,				
								,				·		
							,							

Reservoirs Environmental, Inc. TEM Asbestos Structure Count

Laboratory name:	REI
Instrument	JEOL 100(N) S
Voltage (KV)	100 KV
Magnification	(20KX) OKX
Grid opening area (mm2)	0.011
Scale: 1L=	0,28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

Client:	Rak
Sample Type (A=Alr, D⇒Dust):	A
Air yolume (L) or dust area (cm2)	1164
Date received by lab	10/25/11
Lab Job Number:	223142
Lab Sample Number:	814750
•	;= · · · · · · · · · · · · · · · · · · ·

Fraction of primary filter used	·	
Total Resuspension Volume (ml)		
Volume Applied to secondary filler		

Analyzed by	JB
Analysis date	10/210/11
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	'ס'
Counting rules (ISO, AHERA, ASTM)	Att
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzad

Grid	Grid Opening	Structure			No. of St	o. of Structures		nsions	Identification	Mineral Class			Sketch/Comments	1 = yes, blank = no		
		Туре	Primary	Total	Length	Width		Amphibole	С	NAM	Sketch	Photo		EDS		
1	K4-4	M			·		.·		,							
	H4-4	MO				Pm	b A	80% in 1	zut	. 5	7% deb.	, 'S				
	1914-4	W				ρ_{α}^{V}	mB	60 / wh	n.f	5	7% dehr	\\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\				
	F4-4	F			4.5		(0)		/							
B	H4-3	20			,				<i>r</i>	1						
	64-3	M						1/3	1	10/2	*/y					
	F-4-3	CM					,	1	7	1	/			-		

Rev 5-2009

Reservoirs Environmental, Inc. TEM Asbestos Structure Count

Laboratory name:	REI
Instrument	JEOL 100(N) S
Voltage (KV)	100 KV
Magnification	20KX 10KX
Grid opening area (mm2)	0.011
Scale: 1L =	0.28 un
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

1 2111 1/00/00/00 04	
Client :	Rok
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	1162
Date received by lab	10/25/11
Lab Job Number:	223142
Lab Samote Number:	814781
• •	

F-Factor Calculation (Indirect Pr	eps Only):
Frection of primery filter used	
Total Resuspenaton Volume (ml)	
Volume Applied to secondary filter (ml)	

Analyzed by	JB
Analyaia date	10/26/4
Method (D=Direct, !=Indirect, IA=Indirect, ashed)	70
Counting rules (ISO, AHERA, ASTM)	Att
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure Type		No. of Str	uctures	Dime	nsions	Identification	Mineral Class	•			1 = y	es, blank	= no
			Primary	Total	Length	Width:	Idon(incodion	Amphibole	C	NAM	Sketch/Comments	Sketch	Photo	EDS	
A	E4-3	MΛ			·			,							
•	C4-3	W			F	2	8	olon to	uk	.5-	7º/ de6	~i`\$			
	B4-3	M			1	242	B 57	Chambut		5-	7% debi	η' S			
	C4-1	W				U									
3	13-3	M						10/75	//						
	K3-6	M					7/	7.			·				
	K3-3	MS			1										
,															
,															
			Y.							1					

Analytical Procedures - AHERA

Transmission electron microscopy/energy dispersive X-ray spectrometry/selected area electron diffraction (TEM/EDX/SAED) was employed in the analysis of the samples, which were collected on 25 mm mixed cellulose ester air filters. A portion of each filter was collapsed with acetone and etched in a plasma asher. The etched filter was then coated with a thin layer of carbon in a carbon side down. The sample was then placed inside a condensation washer and treated with acetone to remove the filter matrix and expose any inert material.

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micron with an aspect ratio of 5:1 or greater with substantially parallel

sides.

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with each fiber closer than the diameter of one fiber.

Cluster: is a structure with fibers in random arrangements such that all fibers are

intermixed and no single fiber is isolated from the group.

Matrix: is a fiber or fibers with one end free and the other end embedded or

hidden by a particulate. The exposed fiber end must meet the fiber

definition given above.

If more than 50 asbestos structures are identified and confirmed on a sample, AHERA analysis may be terminated after completion of the grid opening, which contains the 50th structure. AHERA protocol requires the laboratory to reject any clearance sample which contains in excess of 25% total particulate loading or which appears to be unevenly loaded.

The AHERA protocol includes specific sampling requirements, including minimum numbers of samples and minimum air volumes. Specifically, the 70 structures/mm² clearance criteria is only allowed for sets five inside samples (collected in a group of 13 samples including: five outsides and three blanks) with volumes greater than 1200 liters (40 CFR Part 763, page 41894). Deviation from the AHERA sampling protocol may affect the validity of the analytical results. Analysis of samples collected by non-protocol methods are not accredited by NVLAP

Equations Used for Calculations

Area Analyzed, $mm^2 = \# GO \text{ counted } x \text{ Average } GO \text{ Area } (mm)$

Concentration, $s/cc = \frac{\text{\# Asbestos Structures}}{\text{\# GO Counted}} \times \frac{1}{\text{Volume (L)}} \times \frac{\text{Eff. Filter Area (mm}^2)}{\text{Average GO area (mm}^2)} \times \frac{1L}{1000cc}$

Filter loading, s/mm² = # Asbestos structures Area Analyzed (mm²)

GO = TEM grid opening

Due Date: 10294 Due Time: 845

REILAS RESERVOITS ENVIRONMENTAI, INC. se0 i Logan St Denver, CO 80216 · Ph: 303 984-1986 · Fex 303-477-4275 · Toll Free :658 RESI-ENV

Decer - 202_6/10_2008

Page _

•	INVOICE TO: (IF	DIF	FERE	NT)									C	ONTAC	T IN	FOR	MATION:			
Company: RFR Environmental	Company:					Con	tact: (av	e 12	مادع	elle	У				Contac		· 		
Address: 47 W. 9990 S.	Address:					Pho	m:									Pnona	:			
Sandy Ut. 840TO						Fax										Fax:				
								$\omega \sim$			-10	35				CelVpa	ger:			_
Project Number and/or P.O. #:							oJ Oata (-											
Project DescriptionAcceptor: 3th West Sub Sketton - RNV	<u> </u>					<u> </u>	001	vel	Ø (ጉ୧	WI	% (<u>m</u>			_				
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(Rush PCM = 2hr, TEM = 6hr.)		1 1		1 1		1							1)ust =			aint = P		
CHEMISTRY LABORATORY HOURS: Weekdays: 8am - Spm		4		1											Soll =			/ipe = W	<u> </u>	
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RCRA 8 / Metals & Welding RUSH 6 day10 day	required for RUSH	통				Scal			3				5	Drinkin	g Wa			Walter ≃ WW		
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MICROBIOLOGY LABORATORY HOURS: Weekdays: 9am -S	om	8	S 25]]	- 1	Metals			, ,	; _	Ouantification Quantification	ے	S S		T		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	1	+	
E.coli O157:H7, Coliforms, S.aureus 24 hr 2 Day		厦	2 -	\$		Ę.			č	i Ş	+/- or Quantificati	Quantification	Ē		1			1		
Salmonella, Listeria, E.coli, APC, Y & M48 Hr3-5 E		1 E	. S	7400B, OSHA	윮	F.		!	‡	盲	٤١٤		S S							
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epply for efterhoure, weekends and holMays.**		[\$ ₹	ğ	- Total,	등	Z 2	157	+ <u>P</u>	‡	is	* ;	Z g		g	S S				
Special i n structions:		8	A E	- 7400A.	واج	3 8		E.coli O157:H7:	Listeria: +/- Aembic Plate Count:	충	Coliforms: S.aureus:	Σ		5 5 5	Code	tai	Date	Time	EM N	umber (Labor
		Į _≅ ∣	TEM .	PCM.	DUST	RCRA 8, TCLP, Welding Fume,	ORGANICS - METH						SAMPLER'S INITIALS	Sample Volume (L) / Area	Metrix	# Containers	Collected	Collected		Use Only)
Client sample ID number (Sample ID's must be unit	lue)	ᅙ	<u> </u>	<u> </u>	<u> </u>	ĔĞ	흑	T.	MICR	OBIC	LOGY	<u>,</u> 1	100	1	7-2-	*	mm/dd/yy	hh/mm a/p	<u> </u>	
1 3W-102711-E			<u> </u>	$\perp \perp$			\rightarrow	\perp		11		Ц.	<u></u>	917	A		10/24	4	6	Cassol
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9				1 1									}							
10								П	1			П	T -							
Number of samples received: (Add	itional samples shall be listed on	attac	hed lo	ing fbi	rm.)								<u></u>	I	ــــــــــــــــــــــــــــــــــــــ	—-			J	<u> </u>
NOTE: REI will analyze incoming samples based upon hifurmation received and will not i	be responsible for enors or omissions in c	alcutati	ions res	ulting fr	rom the										e egre	ee that	submission o	f the following sa	mples ibr r	equested
analycis as indicated on this Chain of Cuatody shall constitute en analytical services agre	ement with payment tenns of NET 30 day	/s, fallu	re to co	mply wi	th payn	nent ter	nns me	y reau	in a 1	1.8% r	nonthly	Intere	st suncharg	je.						
Relinquished By: July 1	Fed Ex			Date	/Time	<u>. </u>)(v	11	U					Sa	mple	Condi	ition; (On ice	Sealed	Intact
Laboratory Use Only		_					,	-						Те	mp. (- °) _	v		es / No	¥€s (No
	Date/Time: (QZE9.L					arrier														
Contact 10040 (Hone) Lines 1 8x Date	10/29 Time 12:30 a Initi		$\overline{}$			-			Em					Date			Tin		Init	
Contact Phone Email Fax Date				ntact		•			Em	_				Date			Tin	16	init	ials
(Kh msa	-tout	<u> </u>	De.	-7	<u> </u>	3 3 ·	45	20	-	C)-	L									

Attachment I

Key to Count Sheets Count Sheets Analytical Procedures

Structures identifications consist of an Asbestos Type followed by a Structure Type

Asbestos Type

Structure Types

Α	=	Amosite		F	? =	Fiber
An	=	Anthophyllite		F	3 =	Bundle
C	=	Chrysotile		(C =	Cluster
Cr	=	Crocidolite		N	/ 1 =	Matrix
Т	=	Tremolite				

ND = no structures detected

M = other structure associated with a matrix

NAM = Non Asbestos Mineral

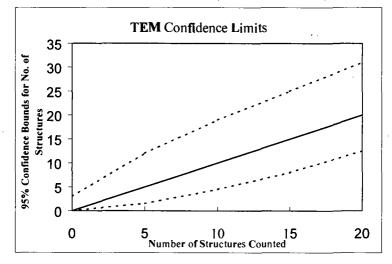
XGB = partly obscured by a grid bar

Sizing Conversion
1 length unit = 5 mm on screen = 0.278 micron
1.80 length units = 0.5 micron
18.0 length units = 5 microns

1 width unit = 1 mm on screen = 0.0556 micron

TEM Analysts

Jeanne S. Orr Nathan DelHierro Angela Heitger Jonathan Bemard Paul D. LoScalzo Mark Steiner Norberto Zimbleman Robert Workman



Upper and lower 95% confidence bounds for the number of structures counted assuming a Poisson distribution.

Reservoirs Environmental, Inc. TEM Asbestos Structure Count

Laboratory name:	REI
Instrument	JEOL 100 N S
Voltage (KV)	100 KV
Magnification	20KX 10KX
Grid opening area (mm2)	0.011
Scale: 1L =	0.28 um
Scale: 10 =	0.056 um
Primary filter area (mm2)	385
Secondary Fitter Area (mm2)	·
QA Tyoe	

Client :	R+R
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	917
Date received by lab	10/28/11
Lab Job Number	223268
Lab Sample Number:	816061
Date received by lab Lab Job Number	223268

F-Factor Calculation (Indirect Prep	s Only):
Fraction of primary filter used	
Total Resuspension Volume (mi)	
Volume Applied to secondary filter (ml)	

Scope Alignment	Date Analyzed
Grid storage location	Month Analyzed
Counting mles (ISO, AHERA, ASTM)	AH
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	D
Analysis date	10/28/11
Analyzed by	-JK

Grid	Grid Grid Opening Structure		No. of Str	ructures	Dimer	nsions	Identification	Mineral Class				1 = y	es, blank	= no
		Туре	Primary	Total	Length	Width		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	95-4	NO							·			·		
	15 -4	N)			Pr	er	A 70/.	intact	F3/	. de	bne			
	25-4	M			Pn	er B	~501.	intact rutact 1- Ven Ven	3/,	des	ris-			
	C4-1	M					·	Ven 1/cm	m	(o/:	28/11			
B	F3-6	M								,	l l			
	95/3	M												
	F5-3	NO												
	c5-le	23												
						·								,

Reservoirs Environmental, Inc. TEM Asbestos Structure Count

Laboratory name:	REI
Instrument	JEOL 100 N S
Voltage (KV)	100 KV
Magnification	20KX 10KX
Grid opening area (mm2)	0.011
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Prima;y filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

Client:	R+R
Sample Type (A=Air, D=Dust):	A
Air voiume (L) or dust area (cm2)	916
Date received by lab	10/28/11
Lab Job Number:	223268
Lab Sample Number:	816062

Lab Job Number.	
Lab Sample Number:	816062
F-Factor Calculation (Indirect Pr	eps Only):
Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter	

Analyzed by	4K
Analysis date	10/28/11
Method (D=Oirect, I=indirect, IA=IndIrect ashed)	D
Counting rules (ISO, AHERA, ASTM)	АH
Grid storage location	Month Analyzed
Scooe Alignment	Date Analyzed

Grid	Grid Opening Structure No. of Structures		Dimer	nsions	Identification	Mineral Class				1 = y	es, blanit	= no		
	One opening	Туре	Primary	Total	Length	Width		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	C5-4	NO							·					
	B5-4	M					Prex	A 60%.	ntac	13	1. debriz		·	
	F3-3	ND					Prep	B 80/. 14	act	1-3/	deblis		ı	
	233	M						Sen			10/20/11			
B	94-3	N)							/		, ,			
	F4-3	M												
	24-3	110				,	-							
	C4-3	ND												
								·						

Reservoirs Environmental, Inc. TEM Asbestos Structure Count

Laboratory name:	REI
Instrument	JEOL 100 N S
Voltage (KV)	100 KV
Magnification	20KX 10KX
Grid opening area (mm2)	0.011
Scale: IL≈	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Tyoe	·

R+R
A
913
10/28/11
223268
816063

Analyzed by	1K
Analysis date	10/28/11
Method (D=Direct, l=Indirect, IA=Indirect, ashed)	D
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

F-Factor Calculation (Indirect Pro	eps Only):
Ftaction of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (mf)	

Grid	Grid Opening	Structure	No. of St	ructures_	Dimer	nsions_	Identification	Mineral Ciass				· 1 = y	es, blank	= no
		Туре	Primaiy	Total	Length	Width		Amphibole	С	NAM .	Sketch/Comments	Sketch	Photo	EDS
A	F2-4	M						·						
	22-4	ND					Prox 1	A topicon	·ct	1-3/1	debris			
	CZ -4	M					Pres B	· AA						
	92-4	ND						Jen Va	en	10/28	/a			
B	92-3	M												
	- 2-3	2												
	22-3	8												
	C2-3	M												
							,							

Reservoirs Environmented, Inc. TEM Aspestos Structure Count

	·
Laboratory name:	REI
tnstmment	JEOL 100 h S
Voltage (KV)	100 KV
Magnification	20KX 10KX
Grid opening area (mm2)	0,011
Scale: IL =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	N/A
QA Tyoe	no QA

R+R
A
916
10/28/11
223268
816064

Analyzed by	1K
Analysis date	10/28/3
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	0.
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

F-Factor Calculation (Indirect Pr	eps Onty):
Fraction of primary filter used	
Totel Resuspension Volume (ml)	
Volume Applied to secondary filter	

Grid	Grid Opening	Structure	No. of St	ructures	Dime	nsions	Identification	Identification Mineral Class				1 = y	es, blank	= no
Gild	Gild Opening	Туре	Primaiy	Total	Length	Width	identification	Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	14-1	NO												
	K4-1	NO					from	A ~90/. M	act	1-3/.	debris			· .
	#4-1	M					Pres	B~A						
	194-1	M						Jen fine	n to	128/1				
B	G3-3	W												
	‡3-3	NO												
	23-3	M												
	C3-3	W												
												·		,

Analytical Procedures - AHERA

Transmission electron microscopy/energy dispersive X-ray spectrometry/selected area electron diffraction (TEM/EDX/SAED) was employed in the analysis of the samples, which were collected on 25 mm mixed cellulose ester air filters. A portion of each filter was collapsed with acetone and etched in a plasma asher. The etched filter was then coated with a thin layer of carbon in a carbon side down. The sample was then placed inside a condensation washer and treated with acetone to remove the filter matrix and expose any inert material.

For each sample, enough grid openings on a 200 mesh TEM grid are analyzed to ensure an analytical sensitivity of at least 0.005 structures/cc. A minimum of four grid openings from two preparations are analyzed for each sample. The grid openings are searched for fibrous structures which, if present are analyzed by SAED and/or EDX (elemental analysis). The AHERA protocol requires SAED confirmation of enough chrysotile asbestos structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures). Both SAED and EDX confirmation are required of enough amphibole structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures) per sample. Either SAED or EDX is required for the remaining asbestos structures of either type. The morphology of each structure is determined and the length and the diameter of any asbestos structures are recorded. Asbestos fibers, bundles, cluster and matrices were identified and recorded. The asbestos structures have been defined in AHERA as follows:

Fiber: is a structure having a minimum length greater than or equal to 0.5

micron with an aspect ratio of 5:1 or greater with substantially parallel

sides.

Bundle: is a structure composed of three or more fibers in parallel arrangement,

with each fiber closer than the diameter of one fiber.

Cluster: is a structure with fibers in random arrangements such that all fibers are

intermixed and no single fiber is isolated from the group.

Matrix: is a fiber or fibers with one end free and the other end embedded or

hidden by a particulate. The exposed fiber end must meet the fiber

definition given above.

If more than 50 asbestos structures are identified and confirmed on a sample, AHERA analysis may be terminated after completion of the grid opening, which contains the 50th structure. AHERA protocol requires the laboratory to reject any clearance sample which contains in excess of 25% total particulate loading or which appears to be unevenly loaded.

The AHERA protocol includes specific sampling requirements, including minimum numbers of samples and minimum air volumes. Specifically, the 70 structures/mm² clearance criteria is only allowed for sets five inside samples (collected in a group of 13 samples including: five outsides and three blanks) with volumes greater than 1200 liters (40 CFR Part 763, page 41894). Deviation from the AFtERA sampling protocol may affect the validity of the analytical results. Analysis of samples collected by non-protocol methods are not accredited by NVLAP

Equations Used for Calculations

Area Analyzed, mm² = # GO counted x Average GO Area (mm)

Concentration, $s/cc = \frac{\# \text{ Asbestos Structures}}{\# \text{ GO Counted}} \times \frac{1}{\text{Volume (L)}} \times \frac{\text{Eff. Filter Area (mm}^2)}{\text{Average GO area (mm}^2)} \times \frac{1L}{1000cc}$

Filter loading, $s/mm^2 = \frac{\# Asbestos structures}{Area Analyzed (mm^2)}$

GO = TEM grid opening

Fireside Chat

The goal of this pilot project is to capture a small amount of the immense knowledge that you have collected throughout your career. Here is a general list of questions to help guide the interview and to allow you time to think of stories or responses that you want to share. Feel free to add questions or to ask people that you work with to add questions.

General Questions to Think About

- 1. Over the years, what have been the biggest hurdles to succeeding or completing tasks?
- 2. What changes have you seen made that were beneficial to the organization? Why?
- 3. What changes have been counterproductive to the organization? Why?
- 4. What areas do you think could use changes?
 - a. What would you change?
 - b. Any suggestions?
- 5. What avenues do you explore when you need a question answered?
- 6. Are there specific people or roles that seem to have answers to these questions more frequently than others?
- 7. What have been some of your greatest successes or accomplishments in your career?
 - a. How did you accomplish these?
- 8. What mistakes have you made in your career?
 - a. What happen?
 - b. How did you avoid these mistakes afterward?
- 9. Over the years you have seen many changes in EPA practices. What do you think are presently the largest hurdles? (Specifically within your role)
 - a. What about moving forward?
- 10. What training/trainings were the most beneficial?
 - a. How did these trainings help you in this position?
- 11. What trainings do you recommend your incumbent take?
- 12. What committees/groups/meetings or groups do you recommend your incumbent join or participate in?
- 13. Are there any people that have helped you with your job that the incumbent should meet with?

 Mentors?
- 14. What skills or attributes do you possess that made you good in this role?
- 15. What knowledge would you like to pass on to someone to help them survive/excel in this role?

Program Specific Questions

1.



October 31, 2011

Laboratory Code:

RES

Subcontract Number:

NA

Laboratory Report:

RES **22**3**2**69-1 None **G**iven

Project # / P.O. #
Project Description:

3rd West Sub Station -

RMP

Eldon Romney R & R Environmental 47 West 9000 South #2 Sandy UT 84070

Dear Customer,

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 223269-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Jeanne Spencer Orr

President

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-0015

TABLE I. TEM AIR FILTER SAMPLE DATA AND ANALYTICAL RESULTS

RES Job Number:

RES 223269-1

Client:

R & R Environmental

Client Project Number / P.O.: None Given

Client Project Description:

3rd West Sub Station - RMP

Date Samples Received:

October 28, 2011

Analysis Type:

TEM, AHERA

Turnaround:

24 Hour

Date Samples Analyzed:

October 29, 2011

Client	Lab		Area	Air	Number of	Analytical	Asbestos	Filter	
ID Number	ID Number		Analyzed Volum Sample		Asbestos Structures Detected	Sensitivity	Concentration	Loading	
			(mm²)	(L)		(s/cc)	(s/cc)	(s/mm²)	
3W-102611-E	EM	816065	0.0880	1066	ND	0.0041	BAS	BAS	
3W-102611-S	EM	816066	0.0770	1066	ND	0.0047	BAS	BAS	
3W-102611-N	EM	816067	0.0770	1064	· ND	0.0047	BAS	BAS	
3W-102611-W	EM	816068	0.0770	1064	ND	0.0047	BAS	BAS	

NA = Not Analyzed

Filter Material = Mixed Cellulose Ester

ND = None Detected

Filter Diameter = 25 mm

BAS = Below Analytical Sensitivity

Effective Filter Area = 385 sq mm

Average Grid Opening in mm² = 0.011

DATA QA

Due	Date:_	0.251
Due	Time:_	845_

S801 Logan St. Dwwer, CO 80216 • PD: 303 964-1986 • Fax 303-477-4275 • Tolf Free :866 RESI-ENV

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Page	e _	_1	of	(

	Pagar : 303-509 INVOICE TO: (IF			ENT)										C	OMTAC	T IN	FOR	MAT	TION:				
Company: R. F. R. Furnonmentel	Company:			,		Con	Contact: Dave Ros keiler								Conte								
Address: 41 W. 9000 S.	Address:	_				Pho	Phono:								Phone:								
Sandy Ut. 84070				Fax	:						•				Fax:								
				Col	pager	80	21	54	1-10	30	ÿ				Cetyp	agor:							
Project Number and/or P.O. #:						Fin	ol Oata	Delive	rabie	Emal	Addre:	S O .											
Project Description/Location: 30 West Sub Skelhan - RANIP								ave	<u>@</u>	1	envi	0	(1)	m									
ASBESTOS LABORATORY HOURS: Weekdays: 7am - Tpm				1.	· R	EQUI	ESTI	ED A	NA	LYS	is					VA	ID N	ATF	RIX CO	DES .	L	AB N	OTES:
PLM / PCM / TEMRUSH (Saine Day) PRIORITY (Next Day)STANDARD															Air =				alk = B	<u> </u>		
(Rush PCM = 2hr, TEM = Shr.)		1 1	;	1 1		1			11			ł				Dust		_		int = P	<u> </u>		
CHEMISTRY LABORATORY HOURS: Weekdays: Sam - Spm		1 1	;		-				Н	1	11					Soil :				oe = W	<u> </u>		
Metal(s) / DustRUSH24 hr3-5 Day	**Prior natification is		Ĕ.			1				اء	11	1					SW	Щ.		Food	<u> </u>		
RCRA 8 Metals & Welding RUSH 5 day10 day	required for RUSH	Ē	Quant	1 1	}	Scen			11	왍			٤		Drinkin	g Wa				Vater * WW	ļ		
Fume Scan / TCLP	tumarounds.**	Point Count	Preps	1		is Si	ı	1		Quantification	11	İ	liga	JE	"ASTM E1792 a) = 0		u dia amb dit	 		
Organics 24 hr 3 day 5 Day MICROBIOLOGY LABORATORY HOURS: Weekdays: 9am • 6pr	n :	ğ	150.			Metals					į	ş١,	Quantification	OTHER NOTES	_ A3	T	782 8	pprovi	30 WIDE	neura Orliy	├─		
E.coli O157:H7, Coliforms, S.aureus24 hr2 Day	3-5 Day	듗		1 1	- (e e		ļ	1	June +/- Or	or Quantification	or Quantification		뽄	ľ		(
Salmonella, Listeria, E.coil, APC, Y & M 48 Hr3-5 Day		<u>a</u>	7402, ISO-Ind	OSHA	횶	Ē				÷ §			aţo	8							 		
	48 Hr3 Day \$ Day	Long	=		Respirable			1	H	Count		2 S	dentification.	SO	1.	l	1						
"Turnaround times establish a laboratory priority, aubject to laboratory volume and a		뜅	F 등	7400B,	Res) \$ \$ \$ \ \$ \$ \$ \$	푪	¥ 6	П	٥I,	1 1	÷ 5	臣	Į.	a a								
apply for afterhours, weekends and holidays.**		ē	≵ક્			- Arahyte(s) TCLP, Welding Fume,	₩.	2 2		Plate	. ! !	1-2	. .	Z	Ę	٠	8		-			:	:
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		·			Ë	METALS RCRA 8,	ORGANICS - METH	Salmonella: E.coli 0157:	Listeria:	Aerobic Plate	Coliforns:	S.aureus:	Š	MPLER'S INITIALS OR	Sample Volume (L) / Area	Metrix Code	# Containers		lected	Time Collected	1 1		Only)
Client sample ID number (Sample ID's must be unique)	PLM	Semi	Š	DUST	M S	Š.		MIC		IOLO			SA	\ <u>\$</u> €	Z	#		v/dd/yy	hit/mm a/p		<u></u>	<u> </u>
1 3W-102611 - E			X												1,066	A		ioli	પાં		3	<u>C</u> 2	45
2 3w-102611 - S	21		\perp			_::									606							<u>r </u>	66
3 3m-10264 - N															1.064								67
4 3w-67611 - W		Π								Ţ					1064						 	₹	(28
5			:					\top			17	1											
6						:	1		П				П							٠.		•	
7							\neg				\prod					T							
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9			<u></u> -		1			\top		7			П			T							
10			_						П	1	\sqcap									:			:
Number of samples received: (Additio	nal samples shall be listed on	attac	hed lo	ng for	rm.)		$\overline{}$															_	
NOTE: REI will analyze incoming samples baset operatification received and will not be reality as indicated on this Chain of Custody shall constitute an analytical services agreem																/e agn	es tha	i subm	ilssich ol i	ine following sa	mples fo	rreques	ted
							.1	7					_	$\overline{}$	\Box								
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Laboratory Use Only Received By: Dat	e/Time: 18251(a-					Carrier	F	ed	5	0						mp.	(F°) _		^e	s/No Y	es / No	, Q	es/No
Results: Contact Dave Phone Email Fax Date /C	129 / Time 12:30a Initia	als 4	Z/Cc	ntact			-	Phon	_						Date				Time)	lr	itials	
Contact Phone Email Fax Date	Time Initi			ntact				Phone							Date				Time	<u> </u>	Ir	itials	
Less mil	Thereise	54	<u>.</u> #	15	70	; =	Fe/	9	C	60	12												

Attachment I

Key to Count Sheets Count Sheets Analytical Procedures

Structures identifications consist of an Asbestos Type followed by a Structure Type

Asbestos Type

Structure Types

Α	=	Amosite		F = Fiber
An	=	Anthophyllite		B = Bundle
C	=	Chrysotile	<i>F</i>	C = Cluster
Cr	=	Crocidolite		M = Matrix
т	_	Tramalita		

ND = no structures detected

M = other structure associated with a matrix

NAM = Non Asbestos Mineral

XGB = partly obscured by a grid bar

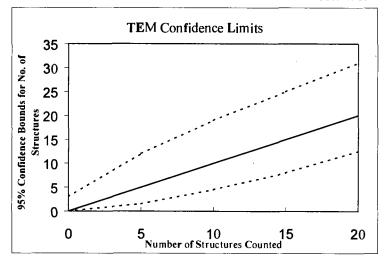
Sizing Conversion

1 length unit = 5 mm on screen = 0.278 micron
1.80 length units = 0.5 micron
18.0 length units = 5 microns

1 width unit = 1 mm on screen = 0.0556 micron

TEM Analysts

Jeanne S. Orr Nathan DelHierro Angela Heitger Jonathan Bemard Paul D. LoScalzo Mark Steiner Norberto Zimbleman Robert Workman



Upper and lower 95% confidence bounds for the number of structures counted assuming a Poisson distribution.

Reservoirs Environmental, Inc. TEM Asbestos Structure Count

Laboratory name:	REI
Instrument	JEOL 100 N/S
Voltage (KV)	100 KV
Magnification_	20KX 10KX
Grid opening area (mm2)	0.011
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	N/A
QA Type	not ea

Client :	R+R
Sample Typo (AeAir, D=Dust):	A
Air volume (L) or dust area (cm2)	1066
Date received by lab	10/26/1
Lab Job Number:	223269
Lab Sample Number:	816065

Analyzed by	-UL
Analysis date	10/28/11
Method (D=Olrect, I=tndirect, IA≈Indirect, ashed)	D
Counting miles (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

F-Factor Calculation (indirect Preps Only):						
Fraction of primary filter used						
Total Resuspension Volume (ml)						
Volume Applied to secondary filter (ml)						

Grid	Grid Opening	Stmcture	No. of Str	ructures	Dime	nsions	klentification	Mineral Class				1 = y	es, blank	= no
	J	Туре	Primary	Total	Length	Width		Amphibole	<u></u>	NAM	Sketch/Comments	Sketch	Photo	EDS
A	L3-3	M												
	K3-3	ND					Prep	A ~901. in	rc4	51. 0	leary			
	433	M					Prep	B 701.	(who	+ ~5	1. debris			
	933	NO					•	Ser	Vire	10/2	eef,			
6	92-4	NÓ									·			
	F2-4	M)					,							
	23-4	NO												
	03-4	M)		·										
								•						

Reservoirs Environmentat, inc. TEM Asbestos Structure Count

Laboratory name:	REI
Instmment	JEOL 100 N/S)
Voltage (KV)	100 KV
Magnification	
GrM opening area (mm2)	0.011
Scale: 1L =	0.28 um
	0.056 um
Primary filter area	385
Secondary Fifter Area (mm2)	1U/A
QA Type	not OA

Client :	R+R
Sample Tyne (A=Alr, D=Dust):	A
Air volume (L) or dust area (cm2)	1066
Date received by lab	10/26/11
Lab Job Number:	223269
Lab Sample Number:	816066

Analyzed by	-W_
Analysis date	10/28/11
Method (D=Direct, l=Indirect, IA=Indirect, ashed)	D
Counting rules (ISO, AHERA, ASTM)	AH
GrM storage location	Month Analyzed
Scooe Alignment	Oats Analyzed

F-Factor Calculation (Indirect Preos Only):					
Fraction of primary filter used	-				
Total Resuspension Volume (ml)					
Volume Applied to secondary filter (ml)					

Grid	Grid Opening	Structure	No. of Structures		Dimensions		Identification	Mineral Class			1 = yes, blank = no		= no.	
		Туре	Primary	Total	Length	Width		Amphibole	·c	NAM	Sketch/Comments	Sketch	Photo	EDS
A	94-6	MD.												
	F4-6	MD					Prop	A 90/ ins	not 1	3/.	debris			
	24-6	NO					Prop	A 90/ into	act	\-3/.	debris	·		
	c4-6	NO						Sen	me	ر · ا	1/28/4			
B	95-1	M		-		,		0 1			·			
	F5-1	M					·					-		,
	25-1	ND					·							
				·										
				•										
														,

Rev 3-2009

Reservoirs Environmentat, Inc. TEM Asbestos Structure Count

Laboratory name:	REI
Instmment	JEOL 100 N/S
Voltage (KV)	100 KV
Magnification	20KX 10KX
Grid opening area (mm2)	0.011
Scale: L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filtar Area (mm2)	N/A
QA Tyoe	not QA

Client:	R+R
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	1064
Date received by lab	10/26/1
Lab Job Number	223269
Lab Sample Number.	816067

Analyzed by	-UL
Analysis date	10/28/11
Method (D=Direct, l=Indirect, tA=Indirect, ashed)	D
Counting miles (ISO, AHERA, ASTM)	AH
Grkl storage location	Month Analyzed
Scooe Alignment	Date Analyzed

F-Factor Calculation (indirect Pr	eps Only):
Fraction of primary filter used	
Total Resuspension Volume (mi)	
Volume Applied to secondary filter (ml)	

Grid	Grid Opening			No. of Structures		nsions	Identification	Mineral Class				1 ≈ yes, blank = no.		
<u> </u>		Туре	Primary	Total	Length	Width		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	64-3	M		,										
	C4-3	M					Prer A	-90/inta	C4	3-5/	debris			
	Kyle	M					prop	B~4		·	·			
·	H-6	W					•	1er VI	hru	20/	rein -			
8	H3-4	129						1					·	
	(13-4)	M								·				
	F3-4	NO									·			
			# 1 hou											
				·					-					
														<u> </u>

Reservoirs Environmental, Inc. TEM Asbestos Structure Count

Laboratory name:	REI
Instmment	JEOL 100 N/S
Voltaae (KV)	100 KV
Magnification	20K0t)10KX
Grid opening area (mm2)	0.011
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	N/A
QA Tyoe	not oa

RTR
A
1064
10/26/1
223269
816068

Analyzed by	-11_
Analysis date	10/28/11
Method (D=Direct, !=Indirect, IA=Indirect, ashed)	D
Counting mles (ISO, AHERA; ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

F-Factor Calculation (Indirect P	reps Only):
Fraction of primary filter used	
Total Resuspension Volume (ml)	·
Volume Applied to secondary filter (ml)	

Grid	Grid Opening	Stmcture	No. of Structures		Dimensions		Identification	Mineral Ciass				1 = yes, blank = no		
		Туре	Primary	Total	Length	Width	, acritinos (gr	Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	46-4	M						·						
	(76-4)	M				pre	PAE	80% mac	4 1	-3/.	debis			
	76-4	NO			·	Pr	on m	1						
	26-4	M						Ju W	rn	20/	28/11			
B	KH-	NO									·			
	HU-1	M												
	94-1	ND												

Analytical Procedures - AHERA

Transmission electron microscopy/energy dispersive X-ray spectrometry/selected area electron diffraction (TEM/EDX/SAED) was employed in the analysis of the samples, which were collected on 25 mm mixed cellulose ester air filters. A portion of each filter was collapsed with acetone and etched in a plasma asher. The etched filter was then coated with a thin layer of carbon in a carbon side down. The sample was then placed inside a condensation washer and treated with acetone to remove the filter matrix and expose any inert material.

For each sample, enough grid openings on a 200 mesh TEM grid are analyzed to ensure an analytical sensitivity of at least 0.005 structures/cc. A minimum of four grid openings from two preparations are analyzed for each sample. The grid openings are searched for fibrous structures which, if present are analyzed by SAED and/or EDX (elemental analysis). The AHERA protocol requires SAED confirmation of enough chrysotile asbestos structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures). Both SAED and EDX confirmation are required of enough amphibole structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures) per sample. Either SAED or EDX is required for the remaining asbestos structures of either type. The morphology of each structure is determined and the length and the diameter of any asbestos structures are recorded. Asbestos fibers, bundles, cluster and matrices were identified and recorded. The asbestos structures have been defined in AHERA as follows:

Fiber: is a structure having a minimum length greater than or equal to 0.5

micron with an aspect ratio of 5:1 or greater with substantially parallel

sides.

Bundle: is a structure composed of three or more fibers in parallel arrangement,

with each fiber closer than the diameter of one fiber.

Cluster: is a structure with fibers in random arrangements such that all fibers are

intermixed and no single fiber is isolated from the group.

Matrix: is a fiber or fibers with one end free and the other end embedded or

hidden by a particulate. The exposed fiber end must meet the fiber

definition given above.

If more than 50 asbestos structures are identified and confirmed on a sample, AHERA analysis may be terminated after completion of the grid opening, which contains the 50th structure. AHERA protocol requires the laboratory to reject any clearance sample which contains in excess of 25% total particulate loading or which appears to be unevenly loaded.

The AHERA protocol includes specific sampling requirements, including minimum numbers of samples and minimum air volumes. Specifically, the 70 structures/mm² clearance criteria is only allowed for sets five inside samples (collected in a group of 13 samples including: five outsides and three blanks) with volumes greater than 1200 liters (40 CFR Part 763, page 41894). Deviation from the AHERA sampling protocol may affect the validity of the analytical results. Analysis of samples collected by non-protocol methods are not accredited by NVLAP

Equations Used for Calculations

Area Analyzed, $mm^2 = \# GO \text{ counted } x \text{ Average } GO \text{ Area } (mm)$

Concentration, $s/cc = \frac{\# \text{ Asbestos Structures}}{\# \text{ GO Counted}} \times \frac{1}{\text{Volume (L)}} \times \frac{\text{Etf. Filter Area (mm}^2)}{\text{Average GO area (mm}^2)} \times \frac{1L}{1000cc}$

Filter loading, $s/mm^2 = \frac{\# Asbestos structures}{Area Analyzed (mm^2)}$

GO = TEM grid opening



November 1, 2011

Laboratory Code:

RES

Subcontract Number:

NA

Laboratory Report: Project # / P.O. #

RES 223363-1 **N**one **G**iven

Project Description:

3rd West Sub Station -

RMP

David Roskelley R & R Environmental 47 West 9000 South #2 Sandy UT 84070

Dear Customer.

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 223363-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Jeanne Spencer Orr

President

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-0015

TABLE I. TEM AIR FILTER SAMPLE DATA AND ANALYTICAL RESULTS

RES Job Number:

RES 223363-1

Client:

R & R Environmental

Client Project Number / P.O.: None Given

Client Project Description:

3rd West Sub Station - RMP

Date Samples Received:

October 31, 2011

Analysis Type:

TEM, AHERA

Turnaround:

24 Hour

Date Samples Analyzed:

October 31, 2011 - November 1, 2011

Client	Lab ID Number		Area	Air	Number of	Analytical	Asbestos	Filter
ID Number			Analyzed	Volume Sampled	Asbestos Structures Detected	Sensitivity	Concentration	Loading
			(mm²)	(L)		(s/cc)	(s/cc)	(s/mm²)
3W-102811-E	EM	816714	0.0990	811	ND	0.0048	BAS	BAS
3W-102811-S	EM	816715	0.0990	811	1	0.0048	0.0048	10.1
3W-102811-N	EM	816716	0.0990	8 13	ND	0.0048	BAS	BAS
3W-102811-W	EM	816717	0.0990	8 13	ND	0.0048	BAS	BAS

NA = Not Analyzed

Filter Material = Mixed Cellulose Ester

ND = None Detected

Filter Diameter = 25 mm

BAS = Below Analytical Sensitivity

Average Grid Opening in mm² = 0.011

Effective Filter Area = 385 sq mm

DATA QA

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-0015

TABLE II. SUMMARY OF ANALYTICAL DATA

RES Job Number:

RES 223363-1

Client:

R & R Environmental

Client Project Number / P.O.: None Given

Client Project Description:

3rd West Sub Station - RMP

Date Samples Received:

October 31, 2011

Analysis Type:

TEM, AHERA

Turnaround:

24 Hour

Date Samples Analyzed:

October 31, 2011 - Noven

Client ID Number			Asbestos Mineral	Asl	pestos Str	ucture Typ	pes*	Structures >5 Microns in Length	**Excluded Structures	Asbestos Structures for	
			•	Fibers	Bundles	Clusters	Matrices			Concentration	
3W-102811-E	EM	816714	ND	0	0	0	0	0	0	0	
3W-102811-S	EM	816715	Chrysotile	- 0	0	0	1	0	0	1	
3W-102811-N	EM	81 67 1 6	ND	0	. 0	0	0	0	0	0	
3W-102811-W	EM	816717	. ND	0	0	0	Ō	0	0	0	

^{*}See Analytical Procedure for definitions

ND = None Detected

^{**}C = Excluded from total due to lack of confirmation

^{**}L = Excluded from total for length less than 0.5 micron (AHERA only)

^{**}A = Excluded from total due to incorrect aspect ratio

Due Date: 10100 Due Time:

8801 Logan St. Denver, CO 80216 • Pt: 303 964-1986 • Fax 303-477-4275 • Toll Free :888 REShENV

Pager: 303-509-2098

RES 223363

<u> </u>	INVOICE TO: (IF DIFFE											NFORMATION:										
The Sunday was well	Company:						Contact: Davi Roskelley						Contact:									
Address:	Address:					Prione:						Phono:										
					Fax:							Fax										
						Cell/pager 80 541 - (035 Cell/page Final Ogta Defiverable Email Address:					Vpager:											
Project Number anci/or P.O. #:						Fin																
Project Description/Legaton: 319 West Sub Station - RATE	<u> </u>			`			<u> </u>	W	<u> </u>	<u>M</u>	en	line	<u>ی ، رہ</u>	***								
ASBESTOS LABORATORY HOURS: Weekdays: 7am - 7pm		Τ.			 -	REQU	EST	ED /	ANA	LYS	SIS			- :	T	VA	LID I	MAT	RIX C	ODES	LA	B NOTES:
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CHEMISTRY LABORATORY HOURS: Weekdays: 8am - Spm]		1		1				1	11	- }				Soil	= S		W	/lpe = W		
Metal(s) / Dust RUSH 24 hr3-5 Day		1	날												S	wab:	= SW		F	= Food		
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rume Scan / ICLP — — — — — —	turnarounds.**	8	- S		1	88	H		11	ğ	11	1	cetion	TES					Other			
Organics 24 hr 3 day 5 Day		Point Count	ISO, +/-, inect Peaps			Metals Scar				Quantification	8	اء	a	2	"AS	TME	1 79 2 a	ppro	ved wipe	media only**	<u> </u>	
MICROBIOLOGY LABORATORY HOURS: Weekdays: 9am - 6pm		1 . 1		i I	1	کھ ا				- 1.	Quantification	cation	힑리	IPLER'S INITIALS OR OTHER NOT]]		1	<u></u>	
E.coli O157:H7, Coliforms, S,aureus24 hr2 Day	3-5 Day	Long report	Level II, 7402, ro-vac, ISO-Indi	OSHA		ļ ļģ.			11	4 8	or Quantific	Quantific	S S	5							L	
Salmonella, Listeria, E.coli, APC, Y & M 48 Hr3-S Day Mold RUSH 24 Hr	10.11- 0.D 0.D	Bu o	Ξ :		aple	l g		1	.	¥ \$				S.	1	İ	}	1		1		
	18 Hr3 Day5 Day	J i	eve Var	7400B.	lig-	(S) Per C	포			٦	F	5		ALS	l	i				1	ļ	
"Turnaround tithes eatablish a laboratory priority, autilect to laboratory volume and are apply for aftertrours, weekends and holidays."	not guaranteed. Additional fees	Q.		15	æ	P. V	핗	+ 5		an i	5 ≱	* ;	ا ّ ا	Ĕ	É			İ		ļ		
Special Instructions:		Short report,	AHERA, lant, Mic	7400A	- Total, Respirable	- Analyte(s) TCLP, Welding Fume,	.s	Samonella: +/-	3 2	<u>.</u>	Coliforns:	: i	F +	Ē	§ "	l g	9					
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Client sample ID number (Sample ID's must be unique)		ž	TEM - AHEI Semi-quant,	S	DUST	WETALS	ORGANICS - METH	Öμ			ioro	<u>∞ ></u>		SAME	Sample Volume (L) / Area	Matrix Code	# Containers		liecled	Collected	"	OSC OINY)
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NOTE: REI will analyze incoming samples based upon information received and will not be re-	sponsible ibr errors or omissions in c	alculat	ions res	sulting	from I	Ilse Inaccu	гасу с	origi	nai dal	ta. By	signing	g clie	nt/c0m	pany re	presentath	ve agr	ees tha	ıt subı	mission of	the following sa	mples for re	quested
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Attachment I

Key to Count Sheets Count Sheets Analytical Procedures

Structures identifications consist of an Asbestos Type followed by a Structure Type

Asbestos Type

Structure Types

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An	=	Anthophyllite	B =	Bundle
C	=	Chrysotile	C =	Cluster
Cr	=	Crocidolite	M =	Matrix
Т	=	Tremolite		

ND = no structures detected

= other structure associated with a matrix

NAM = Non Asbestos Mineral

XGB = partly obscured by a grid bar

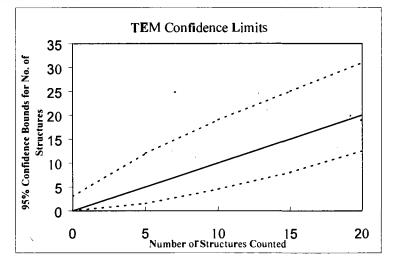
Sizing Conversion
1 length unit = 5 mm on screen = 0.278 micron

1.80 length units = 0.5 micron 18.0 length units = 5 microns

1 width unit = 1 mm on screen = 0.0556 micron

TEM Analysts

Jeanne S. Orr Nathan DelHierro Angela Heitger Jonathan Bernard Paul D. LoScalzo Mark Steiner Norberto Zimbleman Robert Workman



Upper and lower 95% confidence bounds for the number of structures counted assuming a Poisson distribution.

Reservoirs Environmental, Inc. TEM Asbestos Structure Count

Laboratory name:	REI _
Instniment	JEOL 100 N(S)
Voltage (KV)	100 KV
Magnification	EORX 10KX
Orid opening area (mm2)	0.011
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	. 385
Secondary Filter Area (mm2)	
QA Tyoe	

Client :	RoR
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	811
Date received by lab	10-31-11
Lab Job Number:	223363
Lab Sample Number:	816714
	•

Analyzed by	AH
Analysis date	10-31-11
Metirod (D=Direct, i=Indirect, IA=Indirect, ashed)	D
Counting rutes (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

F-Factor Calculation (Indirect Pr	eps Oniy):
Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary litter (ml)	

Grid	Grid Opening	Structure	No. of St	mctures	Dime	nsions	Identification	Mineral Class				1 = y	es, blank	= no
Ond	Ond Opening	Туре	Primary	Totai	Length	Width	identinouten	Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	64-1	ND											,	
	F4-4	ND				,			•					
	F4-1	2		Pus	A; c	10%	intac	x 5%	de	ba				
	E44	Q		Pier	Br	Pied	<i>/</i>							
	E4-1	<u> </u>		1										
\mathcal{B}	F3-4	2								·				
	F3-1	2												
	E3-4	\sim			1									
	E3-1	ND		(/							·		,
													,	

Reservoirs Environmental, Inc. **TEM Astiestos Structure Count**

Laboratonr name:	REI
Instrument	JEOL 100 NS
Voltage (KV)	100 KV
Madnification	EOKX 10KX
Grid opening area (mm2)	0.011
Scale: 1L=	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

ROR
A
811
10-31-11
223363
816715

Analyzed by	JB
Analysis date	ulder
Method (D=Direct, l=Indirect, IA=Indirect, ashed)	
Counting miles (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

F-Factor Calculation (Indirect Preps Only):					
Fraction of primary filter used					
Total Resuspension Volume (ml)					
Volume Applied to secondary filter					

Grid	Grid Opening	Stmcture	No. of Str	ructures	Dimer	sions	Identification	Mineral Class				1 = yes, blank = no		
	Ond Opening	Туре	Primary	Total	Length	Width	IGC KIII GG GG	Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	H5-4	ND		· ·										· · · · · · · · · · · · · · · · · · ·
	615-4	ND				Q	m A	60 %in	In	<u> </u>	3-5% de	bris		
	F5-4	M				h	06	80 hin L	nt	3	-5% pel	bons		
	E5-4	20			,									
·	C5-4	8				,	1.							
B	146-4	N												
	664	ND		·										
	F6-4	M		1	10	1	(0)		V		Ma			
	F6-3	MD						16	1					
								1/2		Vida				

LA = Libby-type amphibole

NAM = Non-asbestos material

Reservoirs Environmental, Inc. TEM Asbestos Starefure Count

Laboratojy name:	REI
Instrument	JEOL 100 N S
Voltage (KV)	100 KV
Magnification	KOKX IOKX
Grid opening area (mm2)	0.011
Scale: IL=	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

Client :	Rak
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	813
Date received by lab	10-31-11
Lab Job Number:	223363
Lab Sample Number:	816716

F-Factor Calculation (Indirect Pr	reps Only):
Fraction of primary filter used	·
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (ml)	

Analyzed by	373
Analysis date	11/1/01
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	D
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scooe Allonment	Date Analyzed

Grid	Grid Opening Structure				No. of Structures Dimensions		Identification	dentification Mineral Class			·		1 = yes, blerik = no		
		Туре	Primaiy	Total	Length	Width		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS	
A	H4-3	M						·							
	64-3	M			(20	A	80/10	3	1	3-5%	deb	√ 5		
	65-3	_W)			6	Din	B	80 %	ndn	d	3-5%	10 bm	,		
	F5-3	W)				1									
	E5-3	W						ih		, /					
B	H4-6	N						Bu	111	1/11				·	
	646	QV						11	. /	1					
	F4-6	W					/								
	E4-6	M													
				,											
													·	Rev 3-2009	

Reservoirs Environmental, Inc. TEM Asbestos Structure Count

Laboratory name:	REI
Instrument	JEOL 100 N S
Voltage (KV)	100 KV
Magnification	EOKX IOKX
Grid opening area (mm2)	0.011
Scale: 1L=	0.28 um
Scale: 1D =	0.056 um
Primary fitter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	·

Client:	RaR
Sample Type (A=Air, D=Dust):	A
Air votume (L) or dust area (cm2)	813
Date received by lab	10-31-11
Lab Job Number:	223363
Lab Sample Number:	816717
	

Lab Sample Number.	TOTOTT
F-Factor Calculation (indirect P	reps Oniy):
Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (ml)	

	
Analyzed by	
Analysis date	
Method (D=Dinsct, I=Indirect,	
IA=Indirect, ashed) Counting miles	
(ISO, AHERA, ASTM)	_ AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid			Structure No. of Structures		Dimensions Idea		Identification	Mineral Class		Mineral Class			1 = yes, blank = no		
Sid Spoining	Туре	Primary	Total	Length	Width		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS		
A	43-4	W						·							
·	(234	W					A								
	F3-4	M			1	2	Å S	O Lunh	ns F	3	5/2 Je 1	12 15			
	E3-4	\sim			R	2	15	70 % N	Las	- 3-	Shodebi	رځ ک			
	C3-4	M						6 0							
3	H3-3	M					1	and ald	4(·				
	G33	W					1								
	F3-3	M					1								
	E3-3	MÓ									,				
										ì					

Rsv 3-2009

Analytical Procedures - AHERA

Transmission electron microscopy/energy dispersive X-ray spectrometry/selected area electron diffraction (TEM/EDX/SAED) was employed in the analysis of the samples, which were collected on 25 mm mixed cellulose ester air filters. A portion of each filter was collapsed with acetone and etched in a plasma asher. The etched filter was then coated with a thin layer of carbon in a carbon side down. The sample was then placed inside a condensation washer and treated with acetone to remove the filter matrix and expose any inert material.

For each sample, enough grid openings on a 200 mesh TEM grid are analyzed to ensure an analytical sensitivity of at least 0.005 structures/cc. A minimum of four grid openings from two preparations are analyzed for each sample. The grid openings are searched for fibrous structures which, if present are analyzed by SAED and/or EDX (elemental analysis). The AHERA protocol requires SAED confirmation of enough chrysotile asbestos structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures). Both SAED and EDX confirmation are required of enough amphibole structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures) per sample. Either SAED or EDX is required for the remaining asbestos structures of either type. The morphology of each structure is determined and the length and the diameter of any asbestos structures are recorded. Asbestos fibers, bundles, cluster and matrices were identified and recorded. The asbestos structures have been defined in AHERA as follows:

Fiber: is a structure having a minimum length greater than or equal to 0.5

micron with an aspect ratio of 5:1 or greater with substantially parallel

sides.

Bundle: is a structure composed of three or more fibers in parallel arrangement,

with each fiber closer than the diameter of one fiber.

Cluster: is a structure with fibers in random arrangements such that all fibers are

intermixed and no single fiber is isolated from the group.

Matrix: is a fiber or fibers with one end free and the other end embedded or

hidden by a particulate. The exposed fiber end must meet the fiber

definition given above.

If more than 50 asbestos structures are identified and confirmed on a sample, AHERA analysis may be tenninated after completion of the grid opening, which contains the 50th structure. AHERA protocol requires the laboratory to reject any clearance sample which contains in excess of 25% total particulate loading or which appears to be unevenly loaded.

The AHERA protocol includes specific sampling requirements, including minimum numbers of samples and minimum air volumes. Specifically, the 70 structures/mm² clearance criteria is only allowed for sets five inside samples (collected in a group of 13 samples including: five outsides and three blanks) with volumes greater than 1200 liters (40 CFR Part 763, page 41894). Deviation from the AHERA sampling protocol may affect the validity of the analytical results. Analysis of samples collected by non-protocol methods are not accredited by NVLAP

Equations Used for Calculations

Area Analyzed, mm² = # GO counted x Average GO Area (mm)

Concentration, s/cc = $\frac{\text{\# Asbestos Structures}}{\text{\# GO Counted}} \times \frac{1}{\text{Volume (L)}} \times \frac{\text{Eff. Filter Area (mm}^2)}{\text{Average GO area (mm}^2)} \times \frac{\text{IL}}{1000cc}$

Filter loading, $s/mm^2 = \frac{\# \text{ Asbestos structures}}{\text{Area Analyzed (mm}^2)}$

GO = TEM grid opening